Colophon

PROJECT INFORMATION

Project title:
Sustainable renewal in Colonies of Benevolence: cultural heritage as a vector for sustainable agricultural development in the Netherlands

Graduation studio:
Urban Fabric

Track:
Landscape Architecture

STUDENT INFORMATION

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Abstract

The Colonies of Benevolence, founded in the early 19th century, were a groundbreaking social experiment aimed at addressing poverty and fostering self-sufficiency in the Netherlands. These colonies, comprising agricultural lands and settlements, were designed to provide employment opportunities and housing for the impoverished population while instilling discipline, work ethic, and moral values. Over the years, the Colonies of Benevolence have evolved, reflecting significant shifts in social, economic, and political contexts. Today, they are recognized as a UNESCO World Heritage Site, highlighting their historical and cultural importance.

The agricultural sector, specifically dairy farming, has played a pivotal role in the development and transformation of the Colonies of Benevolence. The Netherlands has a long-standing reputation as a global leader in agriculture and dairy production, owing to its advanced farming practices, cutting-edge technological innovations, and efficient resource management. The Colonies of Benevolence provide a fascinating case study to explore the complex relationship between heritage conservation and the dairy industry, given their deep historical and contemporary connections to the sector.

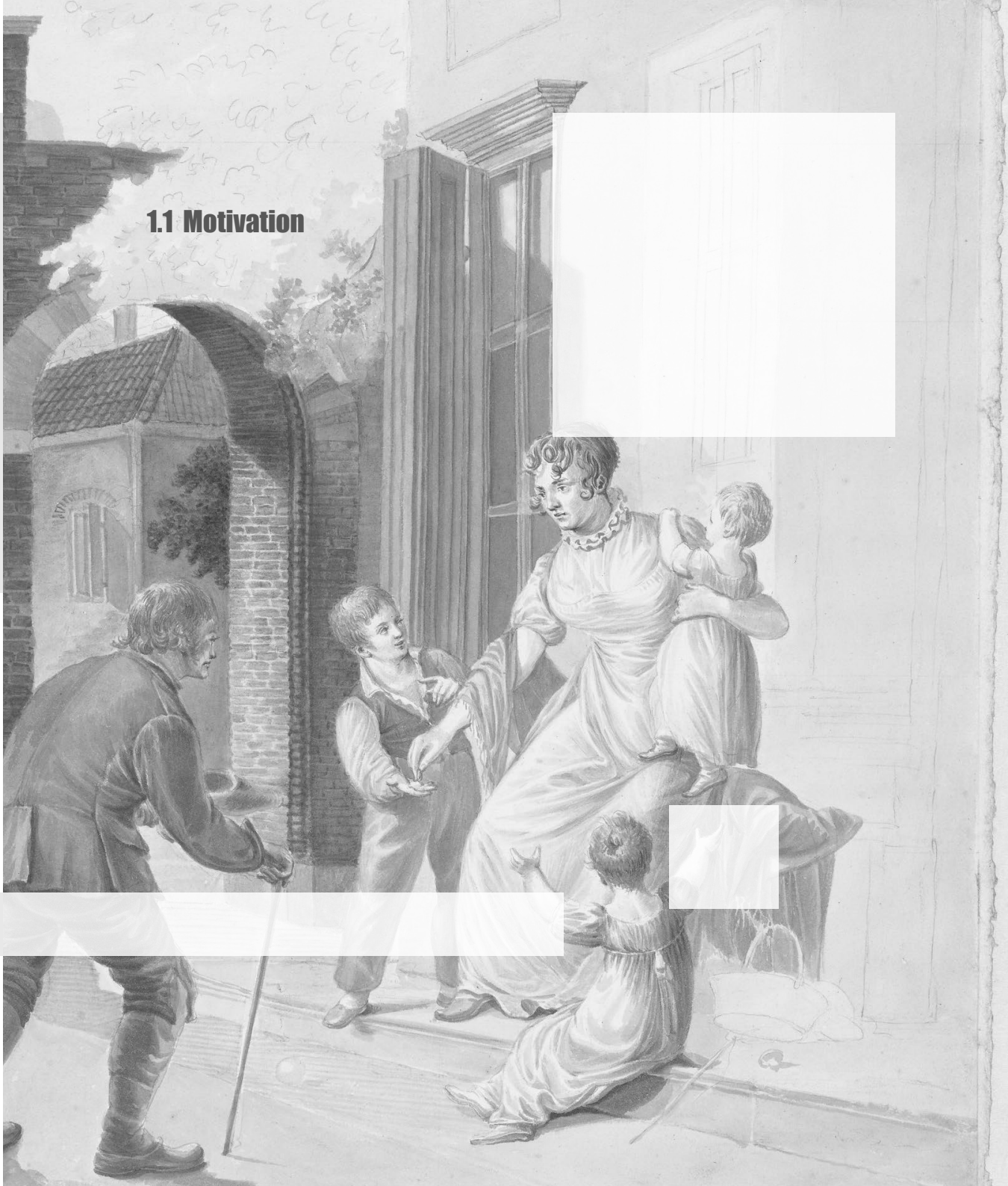
This landscape design report seeks to provide a comprehensive analysis of the Colonies of Benevolence, examining their origins, history, heritage, and spatial design elements while exploring the significance of dairy farming within this context. The study aims to identify the challenges and opportunities associated with integrating heritage conservation, landscape design, and dairy farming, in order to envision a sustainable future for the Colonies of Benevolence that is both culturally rich and economically viable.

The purpose of this chapter is to provide a foundational reading of the history of the Renai Colony project, to understand the patterns of spatial development and identify objects of concern, as well as to connect history, space, and people through a narrative of history and narrative of people. I will conclude with a summary of the foundations and challenges identified during my research and present my research questions

Introduction

01

1.1 Motivation



1.1 Motivation

Figure 1.1: Took by Xuerui WANG, a construction in south-east China.

Camping site

Figure1.2: Koloniën van Weldadigheid Directeurswoning in Frederiksoord (Drents Archief)

Colonies Of Benevolence

In my undergraduate studies, I joined a number of physical construction competitions that had in common the use of traditional techniques to solve current problems, and through these experiences I began to develop an interest in traditional techniques and heritage projects. From learning about history and heritage, we can not only enhance our understanding of culture, but also gain more inspiration to think about the present. This is why I chose Colonies of Benevolence as the subject of my final project.

1.2 Brief Introduction

1.2.1 What is Colonies of Benevolence?

The Colonies of Benevolence were an experiment in social reform which demonstrated an innovative, highly influential model of pauper relief and of settler colonialism – the agricultural domestic colony. Beginning in 1818, the Society of Benevolence founded agricul-tural colonies in rural areas of the United Kingdom of the Netherlands (now the Netherlands and Belgium). The Colonies of Benevolence cre-ated a highly functional landscape out of isolated peat and heath waste-lands through the domestic colonisation of paupers. In the process, colonists would become morally reformed ideal citizens, adding to the nation's wealth and integrating marginal territories in emergent nation states.

BEFORE

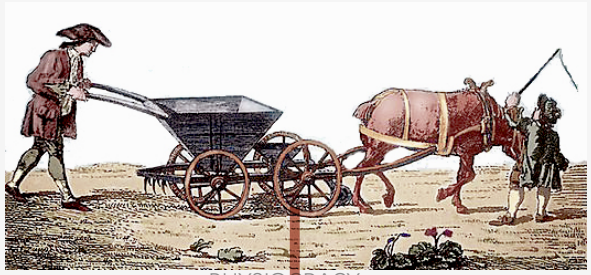
AFTER

Figure 1.3: A Colonist's Family, De Rijk family "as they came with all their possessions", 1909 (Maatschappij van Weldelijkheid).

1.2.2 Theoretical support

The philosophy behind the Colonies of Benevolence was deeply rooted in the Enlightenment ideals of equality, philanthropy, and progress.(P1.4) The proponents believed in the inherent goodness and perfectibility of human nature. They assumed that through labor, discipline, and moral guidance, the poor and disadvantaged could be rehabilitated and reintegrated into society as productive citizens.(P1.5)

Figure 1.4: Project development ambitions Made by author)



PHYSIOCRACY

THE ENLIGHTENMENT

COLONIES OF BENEVOLENCE Graaf Johannes van den Bosch (1780-1844)

Figure 1.5: Theoretical Development History Made by author)

1.2.3 Spatial foundations: seven sites and first reclamation

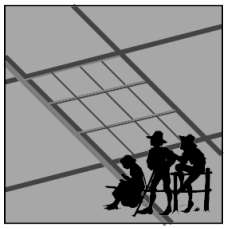
Figure 1.6: Initially established project site and source of personnel Made by author)

The first three colonies - Frederiksoord, Willemsoord, and Wilhelminaoord - were 'free colonies', where the poor families were given a house and a piece of land to cultivate. They were free to leave if they wished, but were expected to abide by the strict rules of the colony during their stay.(P1.6)

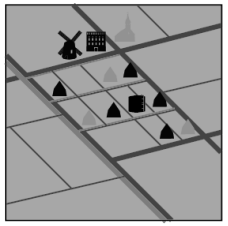
The later colonies - Veenhuizen, Ommerschans, and Merksplas - were 'unfree colonies', where beggars and vagrants were forcibly sent to be reformed through hard work. Veenhuizen, in particular, grew into a large complex with several thousand inhabitants, and its character was more penal than the earlier colonies.(P1.6)

The colonies' original sites were chosen for their remote, uncultivated locations, which offered plenty of land for farming and isolation from the societal influences thought to contribute to poverty. The settlements were meticulously planned and organized, featuring grid-like structures of farms, schools, churches, and workshops.(P1.7)

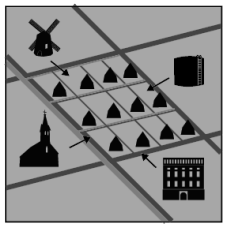
Uncultivated



Foundation reclamation



Agricultural institutions



Production facilities

Figure 1.7: The initial reclamation process Made by author)

1.2.4 General spatial organisation

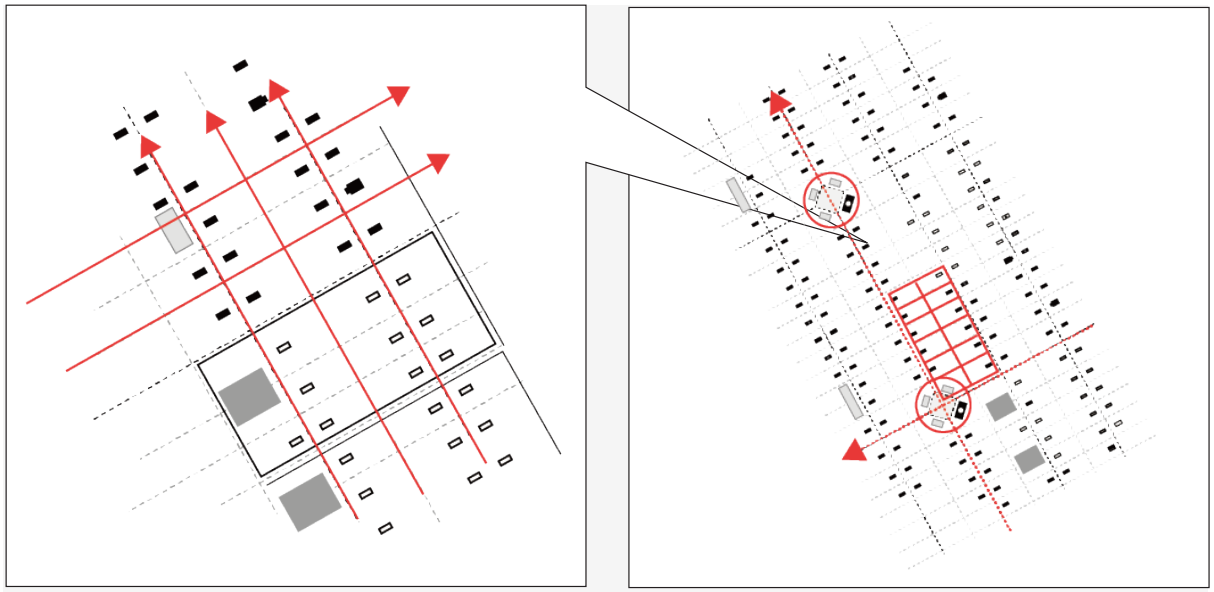


Figure1.8: Linear spatial patterns, Made by author

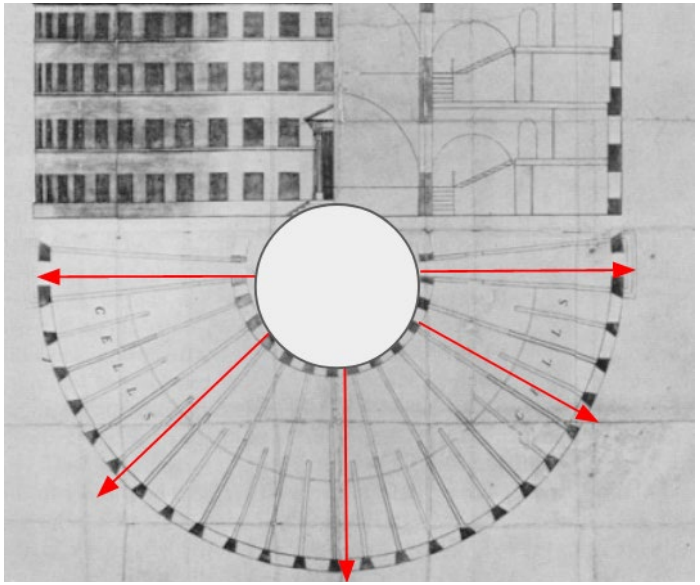


Figure1.9: Theoretical interpretations, panoramic prison theoryFrom https://en.wikipedia.org/wiki/Panopticon

The initial layout was characterized by long, parallel streets flanked by modest houses for colonist families, surrounded by plots of land for agricultural cultivation. As the colony expanded, more facilities were added, such as schools, workshops, and healthcare institutions.

Despite the absence of walls, the 'colony' implies imprisonment, as it echoes Jeremy Bean's principle of social engineering through spatial organisation and closely resembles the prison from which it is to be removed. And the horizontal and vertical grid-like spatial structure certainly creates an internal solidity of class attributes, as well as the effect of spatial oppression. Such a structure would have organised production and life within the colony more effectively

1.3 Focus on Wilhelminaoord and Frederiksoord

1.3.1 Why Wilhelminaoord and Frederiksoord?

There are four reasons for choosing Wilhelminaoord and Frederiksoord(P1.4.1) as the main subjects of the study:

Model Colonies: As the first colonies, Frederiksoord and Wilhelminaoord were designed as model agrarian settlements. They were meticulously planned and provided with necessary infrastructures such as farms, schools, and workshops. The success and challenges of these colonies informed the development of later colonies.

"Free" Colonies: Unlike the later "unfree" colonies where beggars and vagrants were forcibly sent, Frederiksoord and Wilhelminaoord were "free" colonies. The poor families voluntarily moved to these colonies, received a house and a piece of land to cultivate, and were free to leave if they wished. This distinction reflects the evolution of the Colonies of Benevolence project and the broader societal attitudes towards poverty and social reform.

Legacy and Heritage: Today, Frederiksoord and Wilhelminaoord, along with other Colonies of Benevolence, are recognized as UNESCO World Heritage Sites. They are important cultural landscapes that bear witness to a unique chapter in social history. The original layout of the colonies and some of the historic buildings still remain, allowing us to trace the ideals, practices, and experiences of the Colonies of Benevolence project.

Contemporary Relevance: Frederiksoord and Wilhelminaoord are not just relics of the past, but living communities that continue to evolve. The challenge is to preserve their unique heritage while ensuring their social, economic, and environmental sustainability. Efforts are underway to revitalize these colonies, for example, through tourism, education, and sustainable agriculture, making the legacy of the Colonies of Benevolence relevant for the present and future generations.

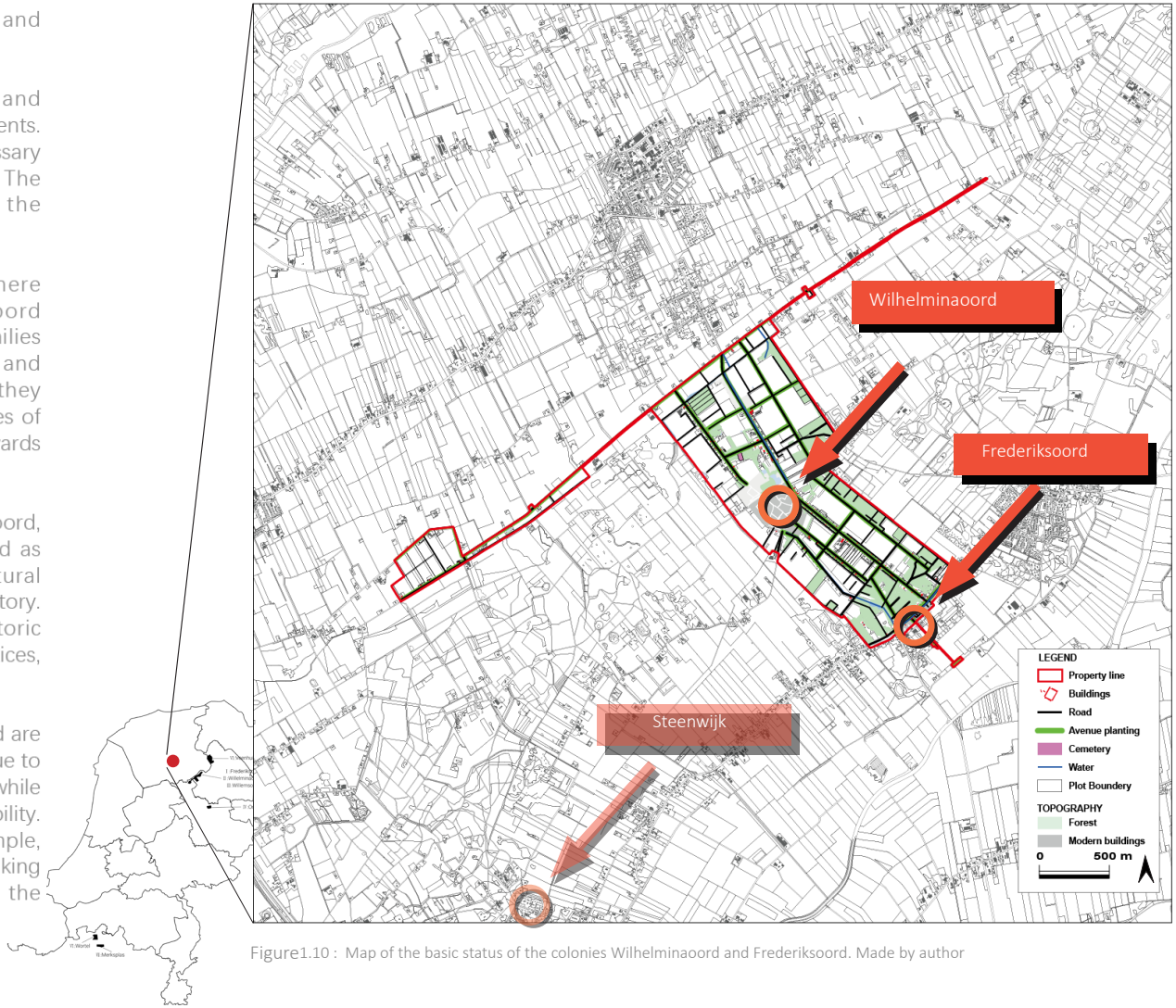


Figure1.10 : Map of the basic status of the colonies Wilhelminaoord and Frederiksoord. Made by author

1.3.2 Spatial expansion of Wilhelminaoord and Frederiksoord

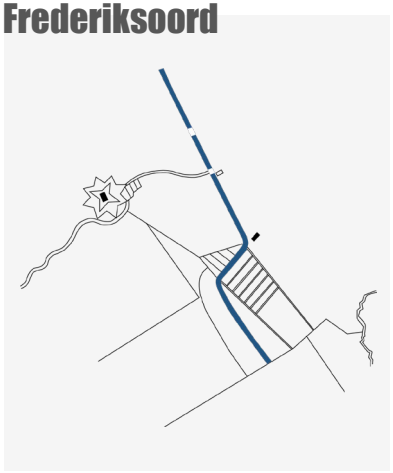
The different stages of the spatial state of the colonies Wilhelminaoord and Frederiksoord are divided into four stages as follows:

Establishment (1818 onwards): The colonies were established on uncultivated heathland, chosen for its isolation and abundance of available land. The settlements were meticulously planned, featuring a grid-like layout of farms, schools, churches, and workshops. The colonists were given a house and a piece of land to cultivate. The spatial organization reflected the project's ideals of order, discipline, and productivity.

Expansion and Diversification (mid-19th century): As the population of the colonies grew, new buildings and facilities were added. The spatial layout became more complex, with a mix of residential, agricultural, educational, and institutional uses. However, the colonies also faced financial and practical challenges, leading to changes in their management and purpose.

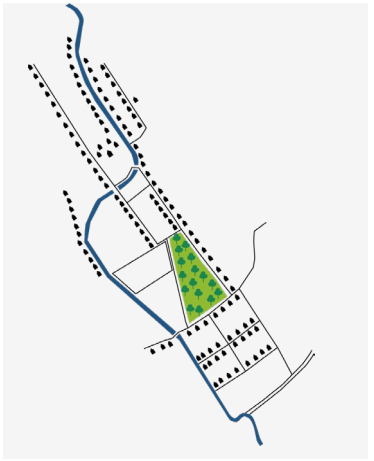
State Control (mid-19th century to early 20th century): The state took over the "unfree" colonies and transformed them into penal institutions. Although Frederiksoord and Wilhelminaoord remained "free" colonies, they were affected by these broader changes. The spatial development during this period reflected the increasing emphasis on control and punishment, with the addition of more institutional and administrative buildings.

Transformation (20th century): The colonies underwent various transformations in response to changing societal needs. Some became sites for social housing or psychiatric institutions, while others retained their agricultural character. The spatial layout evolved accordingly, with new buildings, infrastructures, and landscapes.



1818 onwards

mid-19th century



mid-19th century to early 20th century

20th century

Figure1.11:The time frame of development of Colonies of Benevolence. It shows not only the construction but also the social life of local people, by author

1.3.3 Economic system of Wilhelminaoord and Frederiksoord

The Society of Benevolence established cooperative systems for resource management and distribution in the villages. The Society created a system in which colonists received tools, seeds, and other necessary supplies on credit, repaying their debts through their agricultural produce. These collective approaches to resource management fostered a sense of mutual support and cooperation among the colonists.(P1.12)

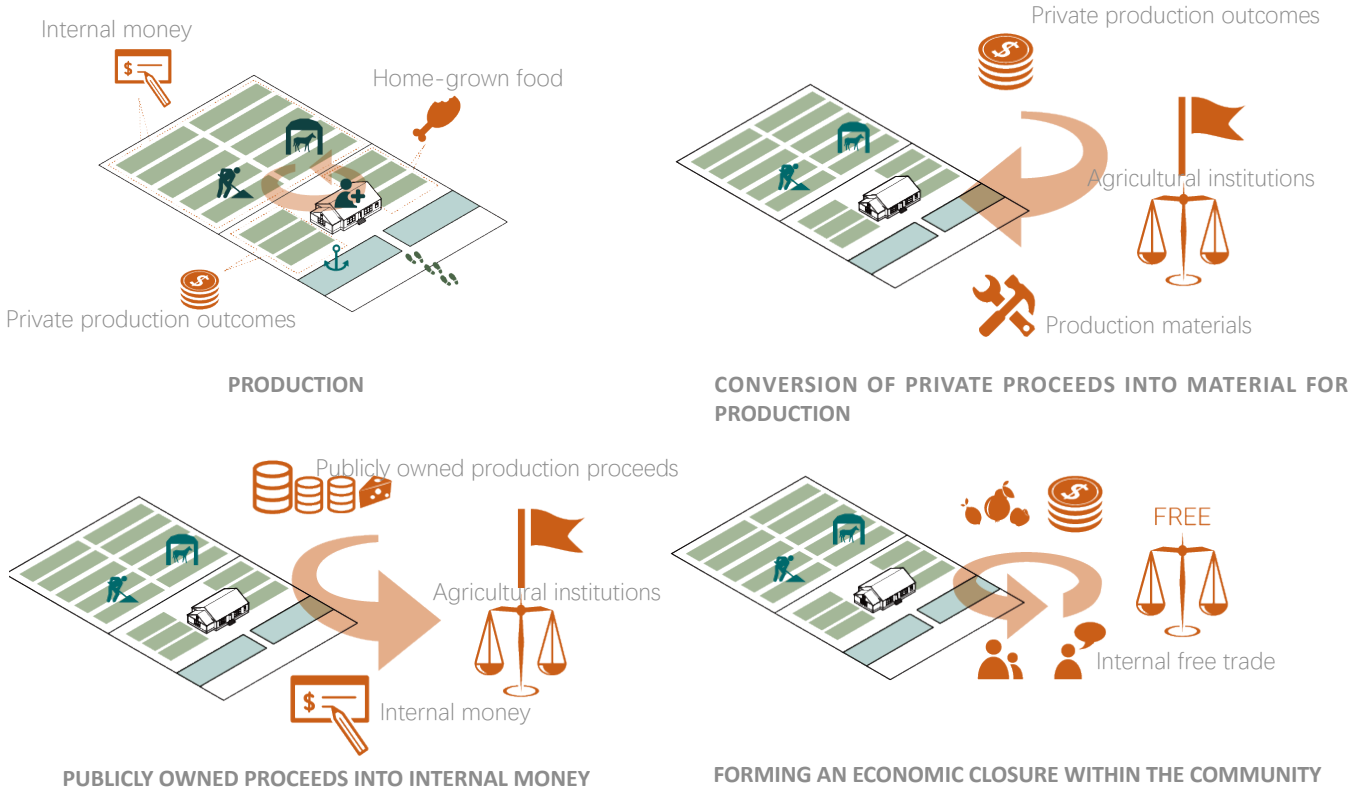


Figure1.12:An internal circular economic model for colonies, by author

1.3.4 How the society became a heritage?

The early inhabitants of Frederiksoord and Wilhelminaoord, who were part of the benevolent colony, transformed the initially barren land into highly productive farmland through labour and agricultural innovation. They built their own homes and public buildings, creating a unique, ordered layout that is now considered an important part of the area's design heritage. Education was valued, with schools providing children with basic skills and teaching adults the value of discipline and hard work. Over time, these efforts formed a cultural landscape that, despite the challenges, represented an important social experiment. Today, the legacy of the work of the colonists is preserved and, together with its rich historical and cultural heritage, it is recognised by UNESCO as part of the World Heritage Site.(P1.13)

From the above research on the spatial development, social establishment and heritage development of the colony, I conclude the following:

1. colonial heritage is essentially colonial agricultural heritage

2. agricultural activities were the basis for the construction of colonial society

3. colonial landscape heritage is greatly influenced by agricultural activities and can be seen as an agricultural landscape

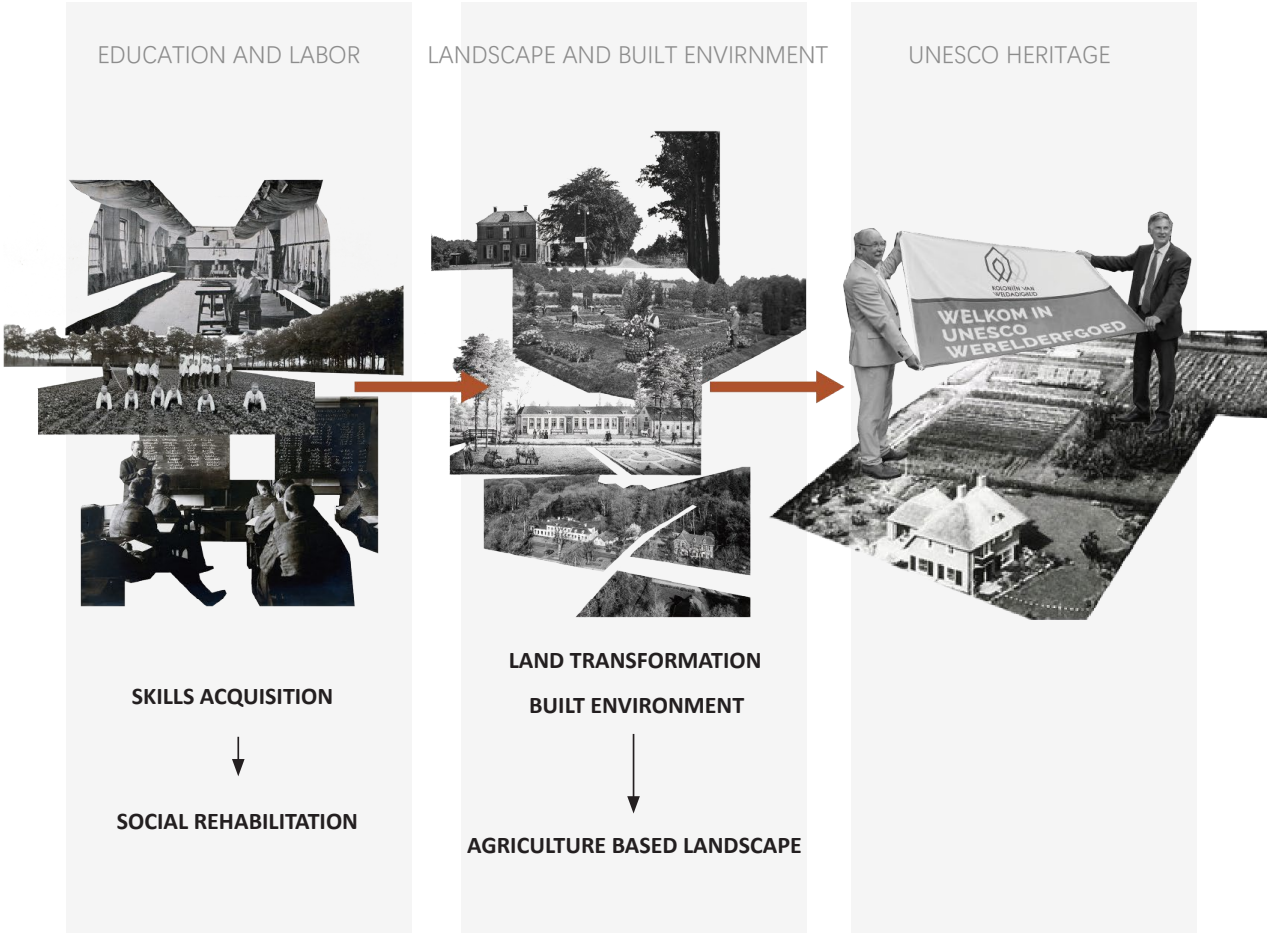
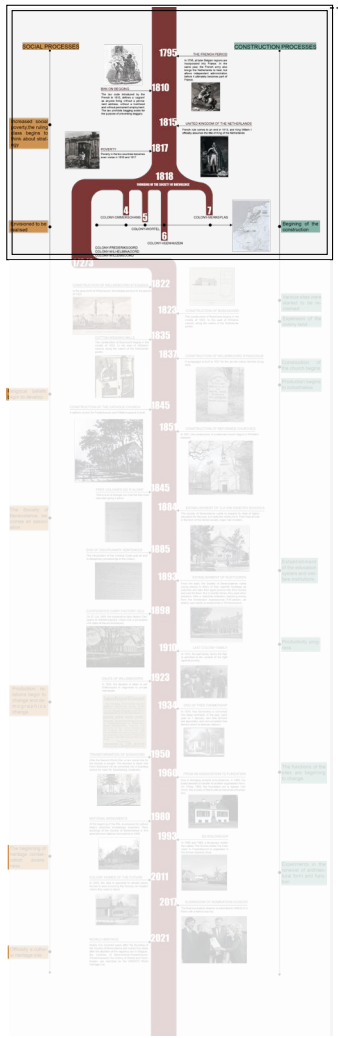
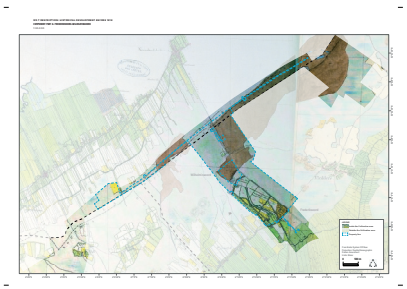


Figure1.13:The process by which a colony becomes a heritage, by author,source from https://www.flickr.com/photos/kolonienvanweldadigheid/albums/72157670148555260

1.4 The narratives

1.4.1 The narrative of history: Phase 1





Establishment (1818 onwards): The Society of Benevolence founded Frederiksoord and Wilhelminaoord with the aim of alleviating poverty through discipline, education, and labor. Poor families, vagrants, and orphans were relocated to the colonies where they were given a house and a plot of land to cultivate. The settlements were meticulously planned, featuring a grid-like layout of farms, schools, churches, and workshops.

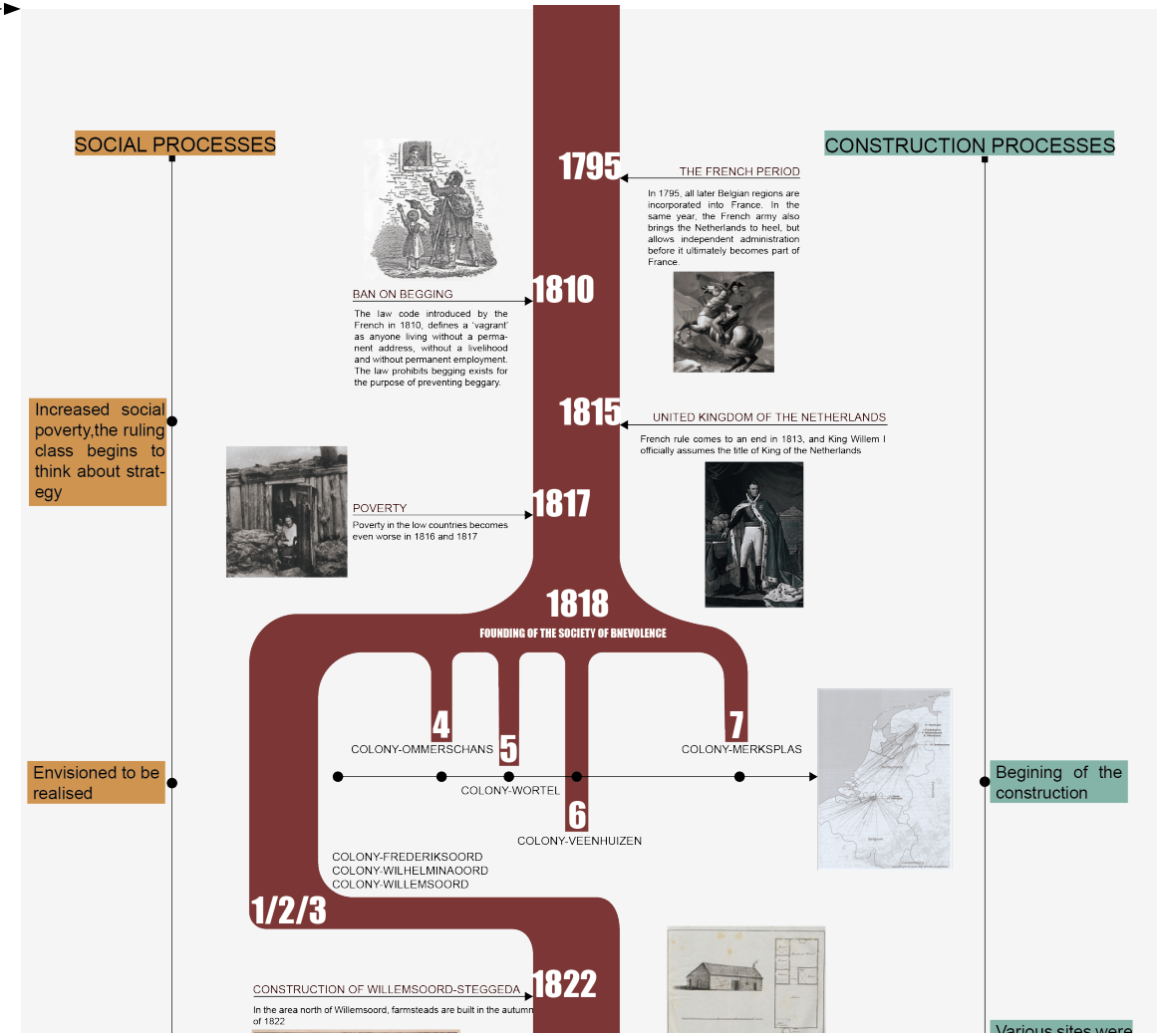
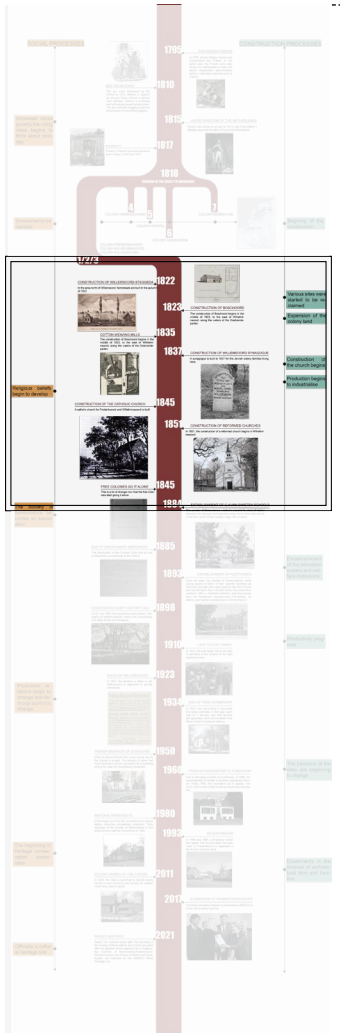
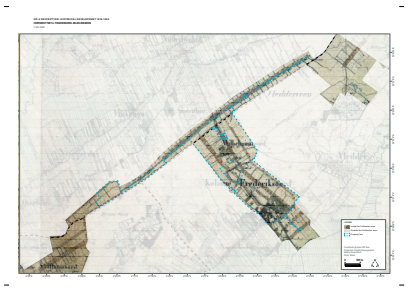


Figure1.14:Historical narrative, by author,https://www.kolonienvanweldadigheid.eu/en/news/colonies-benevolence-approach-unesco-paris

1.4.2 The narrative of history: Phase 2





Expansion and Diversification (mid-19th century): As the population of the colonies grew, they expanded and diversified. New buildings and facilities were added, and the colonies started to face financial and management challenges. The state took over the "unfree" colonies and transformed them into penal institutions, which affected the overall atmosphere and development of Frederiksoord and Wilhelminaoord.

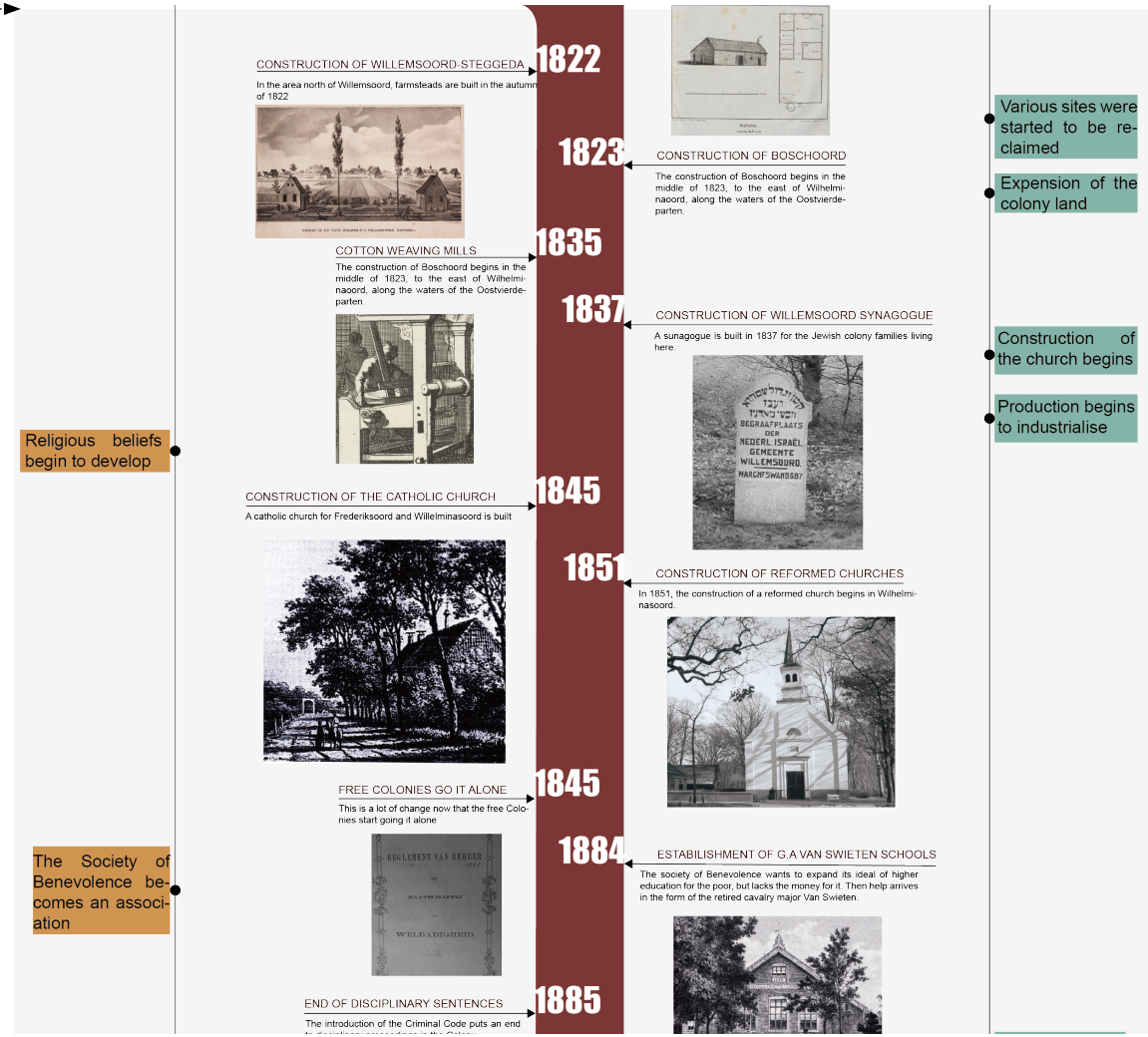
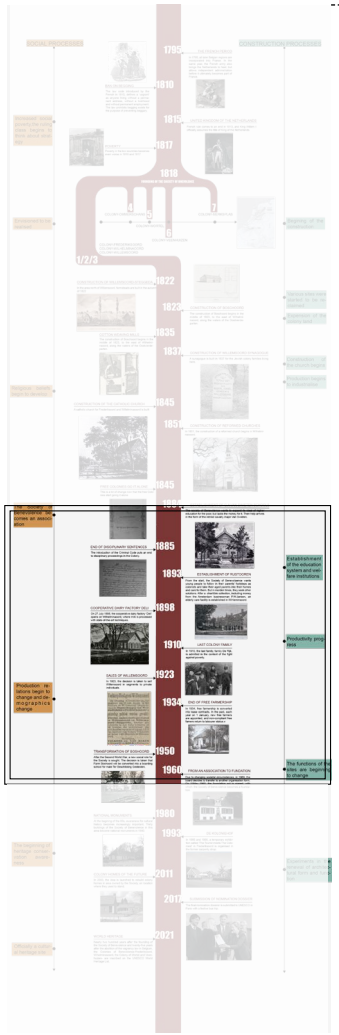
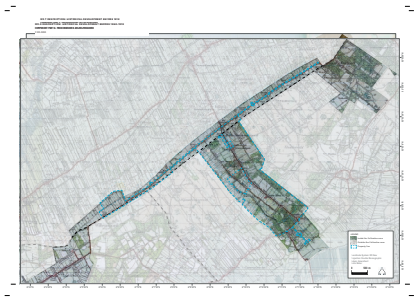


Figure1.15:Historical narrative, by author,https://www.kolonienvanweldadigheid.eu/en/news/colonies-benevolence-approach-unesco-paris

1.4.3 The narrative of history: Phase 3





Transformation (20th century): The colonies underwent significant transformations throughout the 20th century, in response to societal changes. Some became sites for social housing, others developed into psychiatric institutions, while some retained their agricultural character. The spatial development evolved, with new infrastructures and landscapes reflecting these changes.

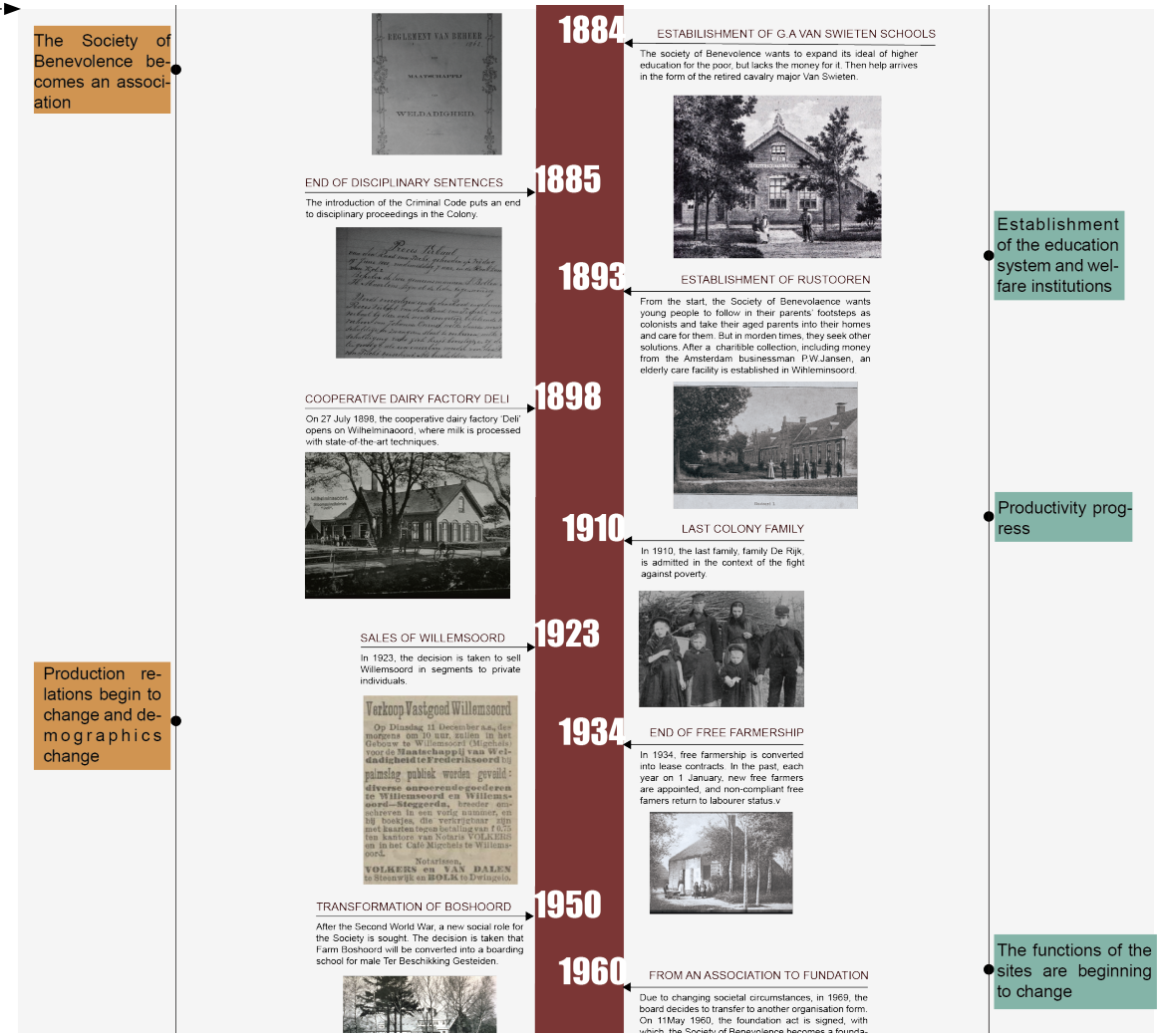
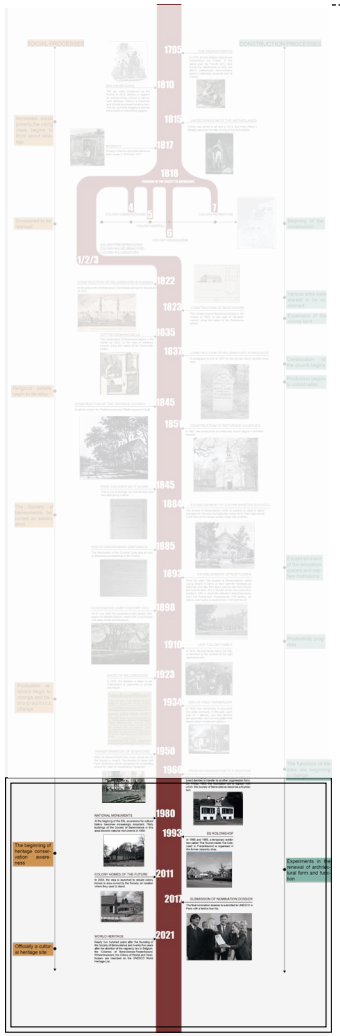
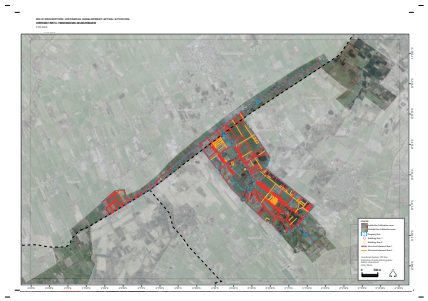


Figure1.16:Historical narrative, by author,https://www.kolonienvanweldadigheid.eu/en/news/colonies-benevolence-approach-unesco-paris

1.4.4 The narrative of history: Phase 4





Preservation and Revitalization (21st century): The current stage focuses on preserving the unique heritage of the colonies while revitalizing them for contemporary uses. Efforts include conserving the historic buildings and landscapes, interpreting and presenting their history, and developing new functions and activities that respect the heritage value of the colonies. The recognition of Frederiksoord and Wilhelminaoord as UNESCO World Heritage Sites in 2018 marked a significant milestone in this stage.

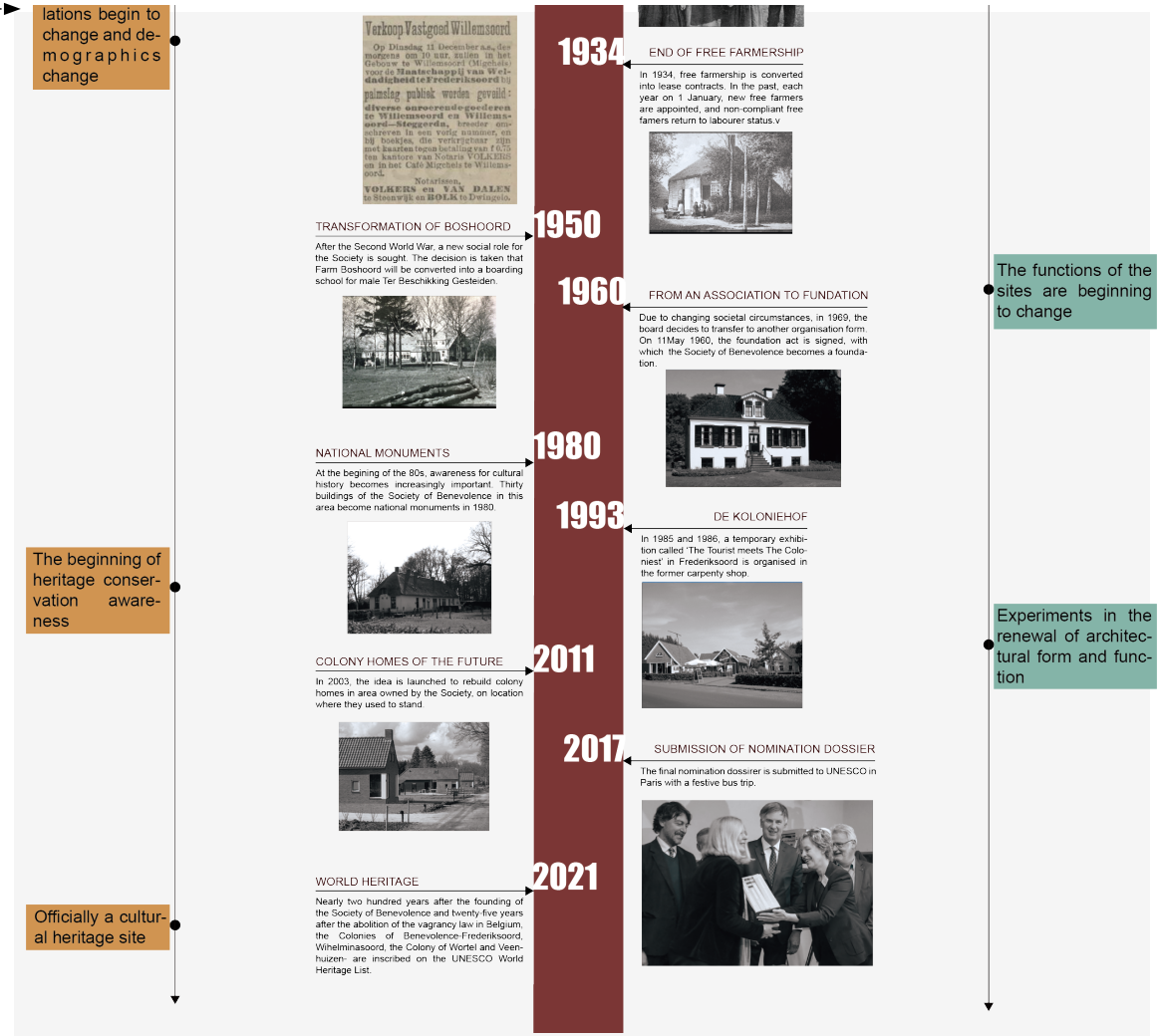


Figure1.17:Historical narrative, by author,https://www.kolonienvanweldadigheid.eu/en/news/colonies-benevolence-approach-unesco-paris

1.4.5 The narrative of people: Colonial population categories

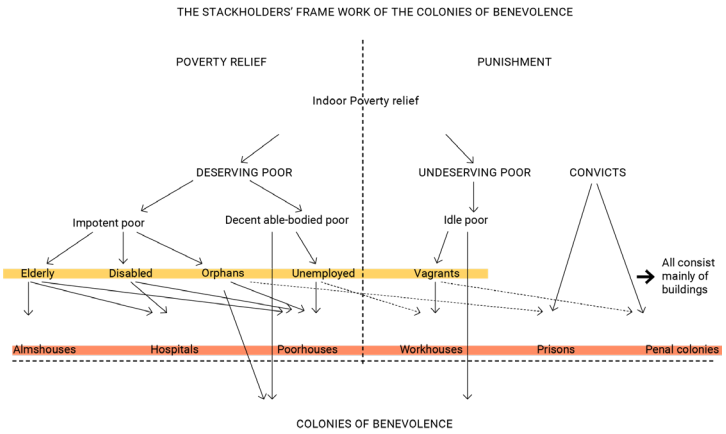
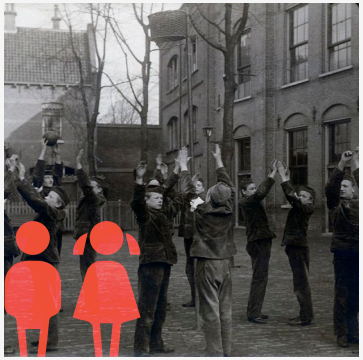


Figure1.18:People Categories, source from CofB_NominationFile_2020_scherm_lowres-compressed

Colonists were divided into three categories: "free" colonists, who voluntarily joined the colonies to escape poverty; "indigent" colonists, sent by municipalities as part of their poverty relief efforts; and "orphan" colonists, brought to the colonies as wards of the Society. Each category had distinct rights and responsibilities within the colony, with free colonists enjoying greater autonomy and opportunities for upward mobility.

Poor family



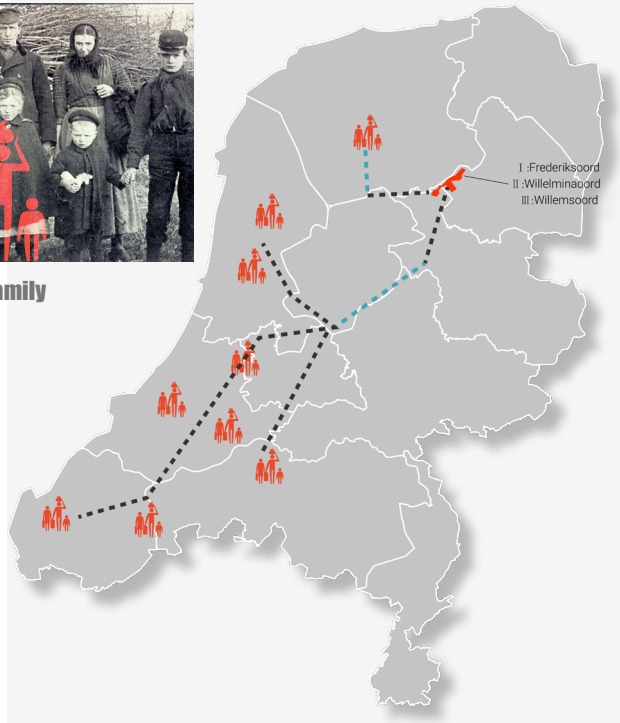
Orphans

Vagrants and beggars

Figure1.19:People Categories of Frederiksoord and Wilhelminaoord, source from https://www.flickr.com/photos/kolonienvanweldadigheid/albums/72157670148555260

1.4.6 Migration routes and colonial life

Poor family



Selected poor families from the major cities would have used horse-drawn carriages and boat transport to enter the colony, the route to the colony from Amsterdam, The Hague and Rotterdam is illustrated in Figure P1.19

Figure1.20:Migration routes for poor families, source from https://www.flickr.com/photos/kolonienvanweldadigheid/albums/72157670148555260

For poor families who move here, they will face the following scenarios:

Housing and Living Conditions: Upon arrival, families were assigned a simple, one-story house and a plot of land. The house typically provided basic shelter and amenities, but conditions were spartan by today's standards.

Agriculture and Work: Each family was given a plot of land to cultivate. They were trained in agricultural techniques and were expected to grow their own food. If they produced more than they needed, they could sell the surplus back to the colony. Work was a central part of life in the colony, and everyone was expected to contribute, including children.

Education: The Society of Benevolence valued education and saw it as a key to social improvement. Children were required to attend school, where they learned reading, writing, and arithmetic. Adults were also offered education, particularly in practical subjects that could help improve their farming practices.

Discipline and Order: Life in the colonies was strictly regulated. There were rules about everything from work hours to moral conduct. Inspectors would regularly visit homes to ensure that they were clean and that the families were living according to the colony's regulations.

Social Life: The colonies had a strong sense of community. Social activities centered around the church and community gatherings. These activities helped to build a sense of camaraderie among the colonists and foster a collective identity.

Challenges: Life in the colonies was not easy. The soil was poor and difficult to cultivate, and the families had to work hard to grow enough food. The strict rules and regulations could also be a source of tension. Some families struggled to adapt to the colony's expectations and chafed under the strict discipline.

Orphans

As shown in Figure P1.20, the orphans were collected by the local authorities in shelters in the major cities and travelled en masse to the colony, mainly from The Hague, Amsterdam and Rotterdam to Utrecht and from Utrecht to the colony

Figure1.21:Migration routes for orphans, source from https://www.flickr.com/photos/kolonienvanweldadigheid/albums/72157670148555260

Here's a general picture of what life might have been like for orphans in these colonies:

Arrival and Settlement: Upon arrival, orphans were typically housed in shared facilities specifically for children. They would live together under the supervision of colony staff members, who were responsible for their wellbeing and discipline.

Education: Education was a key part of life in the colonies. Orphans attended school, where they were taught basic literacy and numeracy skills. They were also given vocational training, equipping them with practical skills that would help them find employment and lead self-sufficient lives as adults.

Labour: Aside from education, orphans were expected to contribute to the work of the colony. This might include farm work, chores in the housing facilities, or assisting in workshops or other colony enterprises. The nature of the work would usually be suited to the age and abilities of the child.

Discipline and Order: Life in the colonies was highly structured, and discipline was emphasized. This was true for all inhabitants, but especially for orphans who were under the direct care of the colony staff. Rules and routines were a part of daily life, and infractions could be met with punishments.

Community: Despite the challenges, the colonies also offered a sense of community. Orphans lived, worked, and learned together, forming bonds with each other and with other members of the colony. Churches, schools, and community events provided opportunities for social interaction and a sense of belonging.

The migration of beggars and vagrants was not much different from that of orphans and prisoners, and was mainly done in a concentrated manner

Figure1.22:Migration routes for vagrants and beggers, source from https://www.flickr.com/photos/kolonienvanweldadigheid/albums/72157670148555260

There are some general aspects of their life in the colonies that can be highlighted:

Structured Living: Life in the colonies was highly structured, with strict schedules and routines. Vagrants and beggars, who might have been used to a more chaotic and unstructured lifestyle, would have had to adapt to this new way of living. This included set times for meals, work, education, and leisure activities.

Discipline and Order: The colonies were governed by a strict code of conduct, with penalties for non-compliance. This would have been a significant change for vagrants and beggars, who were often seen as troublemakers in their previous environments.

Labor and Skill Development: All colonists, including vagrants and beggars, were expected to work. They were trained in agricultural techniques and given a plot of land to cultivate. This labor was seen as a form of therapy and rehabilitation, aimed at instilling a strong work ethic and providing the individuals with useful skills.

Education: Alongside physical labor, education was seen as a crucial part of the reform process. Basic literacy and numeracy skills were taught, as well as vocational skills, to further increase the employability and productivity of the colonists.

Community Life: The colonists lived in a close-knit community, with social activities and events often centered around the church or school. This sense of community was seen as another important aspect of the reform process, aimed at fostering a sense of belonging and responsibility among the colonists.

Challenges: Despite the ideals of the Colonies of Benevolence, life was not easy for the colonists. The work was hard, the conditions could be harsh, and the strict discipline and routines were not to everyone's liking. Some colonists resisted the rules and attempted to escape, while others struggled with the transition from their previous life.

1.4.7 Summary

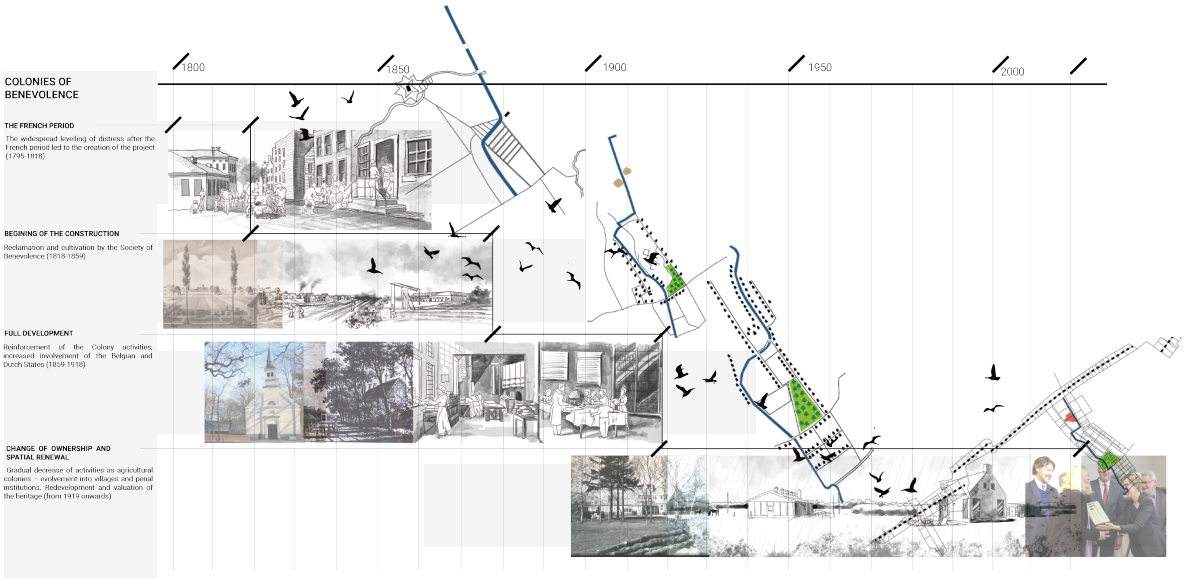


Figure1.23:The time frame of development of Colonies of Benevolence. It shows not only the construction but also the social life of local people, by author

Studying the narratives of Frederiksoord and Wilhelminaoord in the Colonies of Benevolence project provides several valuable insights:

Social Innovation: The colonies represent an early example of a social welfare experiment, aiming to alleviate poverty through discipline, education, and labor. This innovative approach provides lessons for contemporary social policies and interventions.

Spatial Planning and Design: The meticulous planning and orderly layout of the colonies illustrate the importance of spatial planning and design in shaping social outcomes. It showcases how the built environment can reflect and reinforce certain social values and goals.

Adaptability and Resilience: The colonies' evolution over time demonstrates their adaptability and resilience in the face of changing societal needs and circumstances. This provides insights into how communities can evolve and adapt to survive and thrive.

Heritage Conservation and Revitalization: The current stage of preserving and revitalizing the colonies highlights the importance of heritage conservation. It also provides lessons on how to balance the preservation of historical values with the need for contemporary uses, creating a sustainable future for heritage sites.

Human-Nature Interaction: The transformation of the initially barren land into productive farmland and the creation of a unique cultural landscape showcase the dynamic interaction between humans and nature, providing valuable lessons for sustainable development and environmental management.

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These inspirations are the basis of my knowledge of the topic of heritage, and through the exploration of history, it is possible to deepen the knowledge of not only the site itself, but also to explore the possibilities of the future existence of heritage.

1.5 Site visit and spatial perception

1.5.1 What it looks like in history?

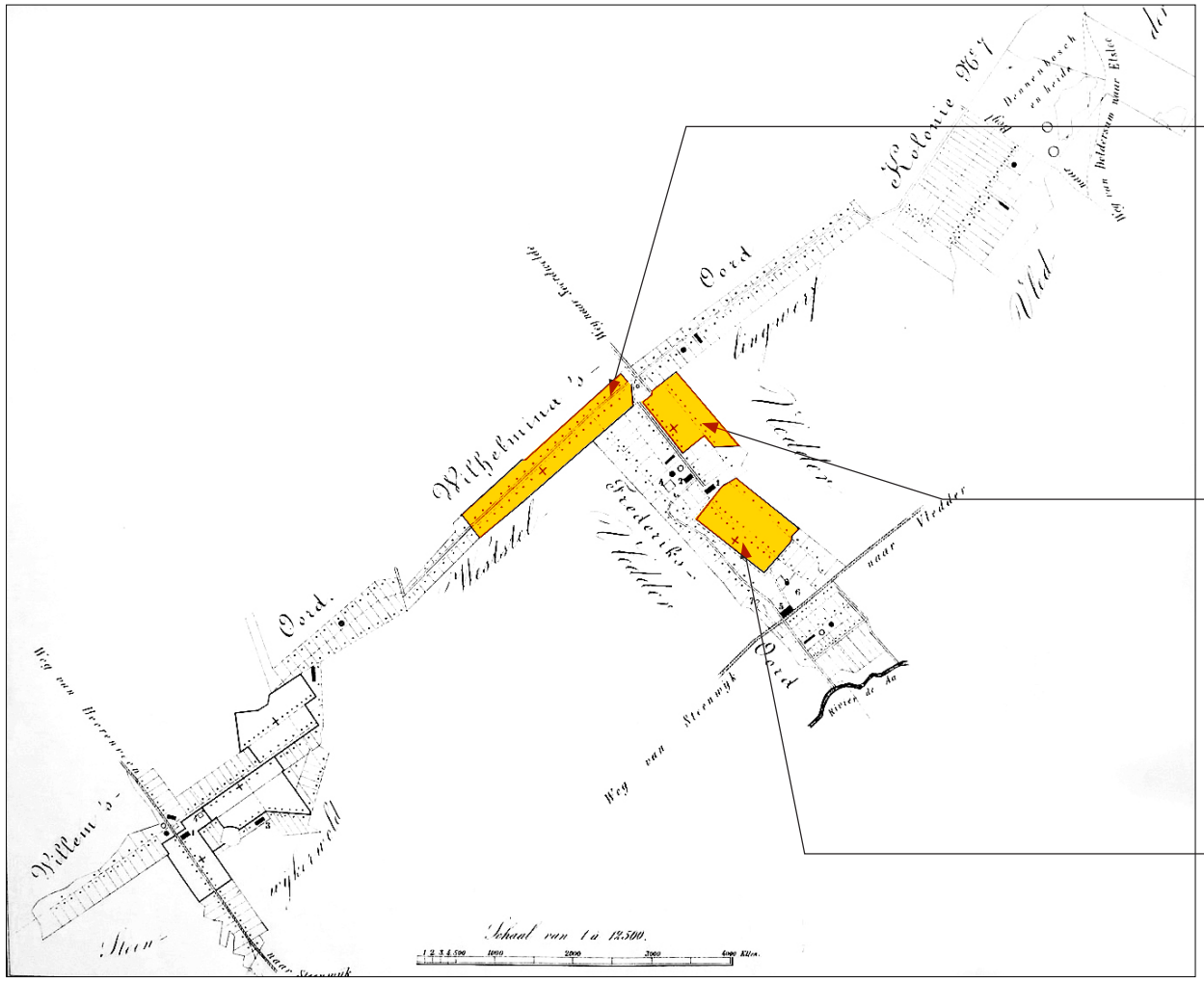


Figure1.24:the old map of the colony, by author,from: https://www.flickr.com/photos/kolonienvanweldadigheid/albums/72157670148555260

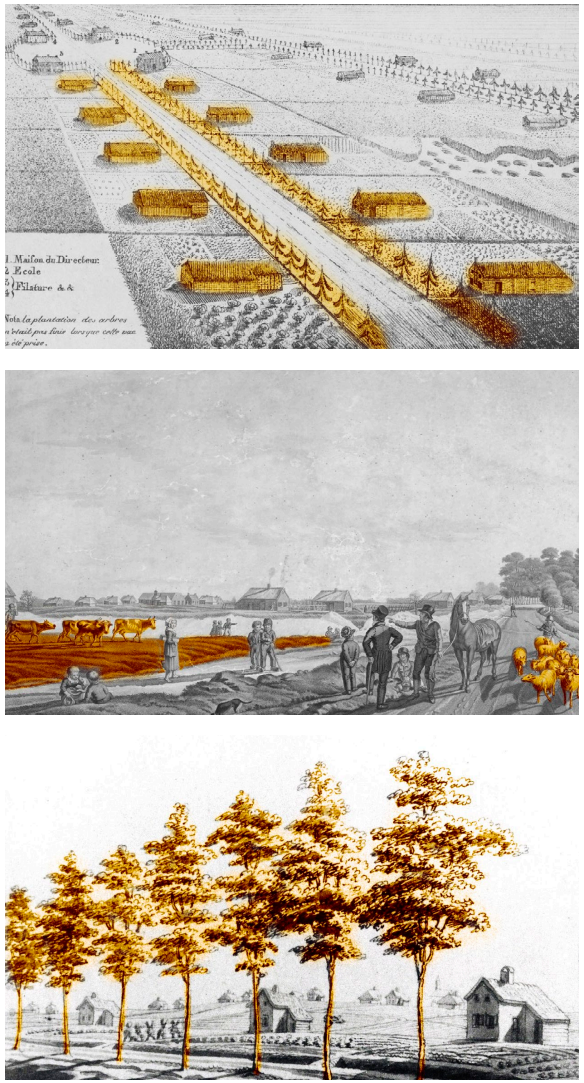


Figure1.25:Old pictures of the colony,from: https://www.flickr.com/photos/kolonienvanweldadigheid/albums/72157670148555260

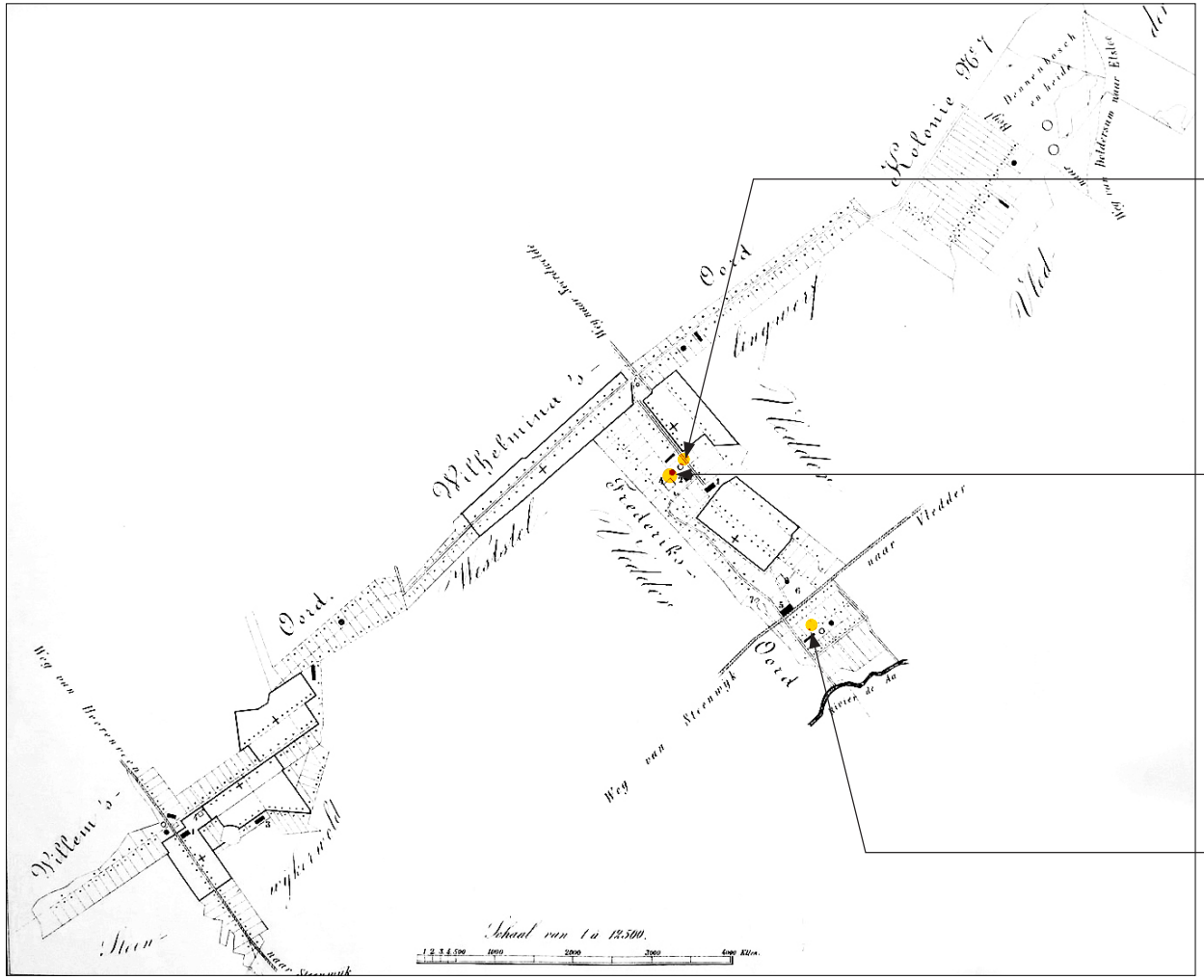


Figure1.26:the old map of the colony, by author,from: https://www.flickr.com/photos/kolonienvanweldadigheid/albums/72157670148555260

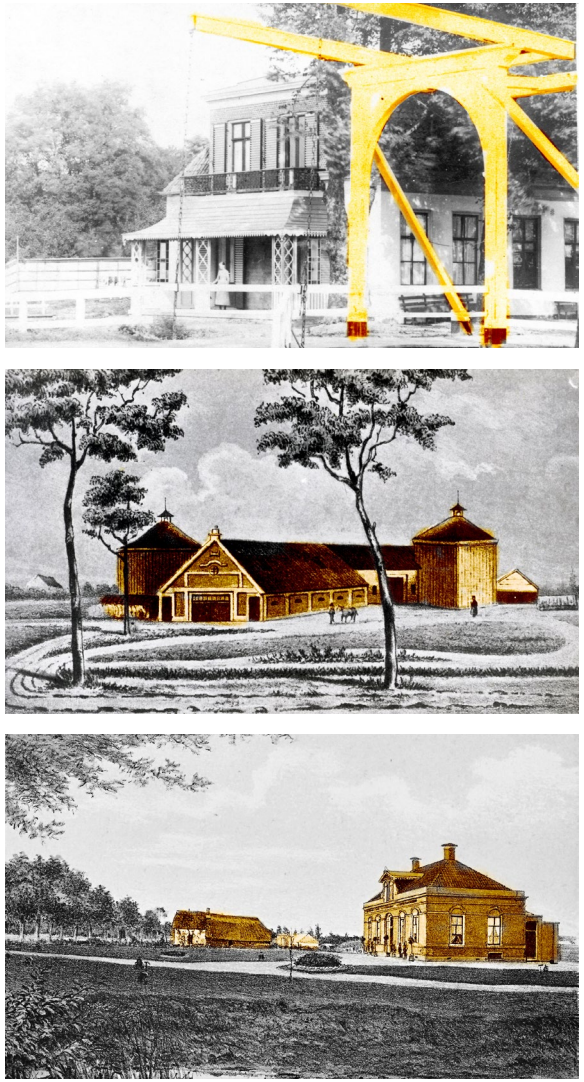


Figure1.27:Old pictures of the colony,from: https://www.flickr.com/photos/kolonienvanweldadigheid/albums/72157670148555260

1.5.2 What it looks like for now?

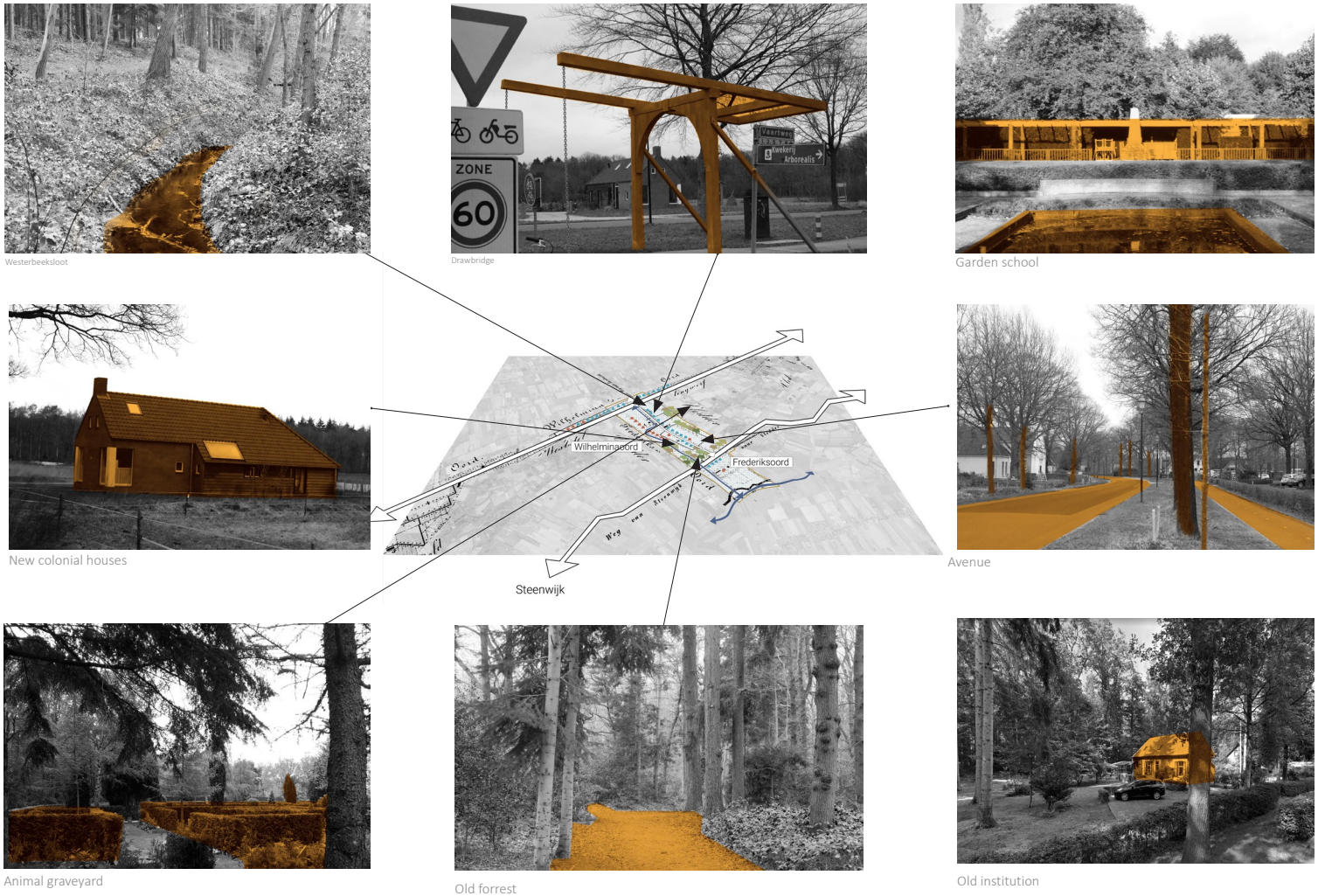


Figure1.28:Pictures of the colony, by author.

1.6 Problem field

1.6.1 Low-active communities

Figure1.29:Diagram to show lack of vibrant communities, by author.

In my previous research, I have established a basic knowledge of colonial history and a basic perception of colonial space. At the same time, I realized that colonial heritage is constantly experiencing challenges and risks in the process of development, especially in today's society where heritage sites are facing unprecedented challenges in three main areas:

1. low vitality communities.
2. unsustainable agricultural activities.
3. outdated heritage conservation methods.

Demographic Shifts: The population of the area has changed over time, with many young people leaving to seek employment or education opportunities elsewhere. This has left an aging population, with fewer young people remaining to contribute to community life.

Limited Economic Opportunities: The area is primarily rural, with limited economic opportunities. This can make it difficult to attract new residents or to create new job opportunities, leading to a lack of economic activity and vibrancy in the community.

Lack of Community Infrastructure: There is a limited range of community infrastructure in the area, including recreational facilities and social spaces. This can make it challenging to create opportunities for social interaction and engagement.

Isolation: Frederiksoord and Wilhelminaoord are relatively small, isolated communities, which can make it difficult to create a sense of belonging and connection among residents. The lack of public transportation infrastructure can also make it difficult for residents to access services or to travel to nearby towns or cities.

1.6.2 Unsustainable agriculture

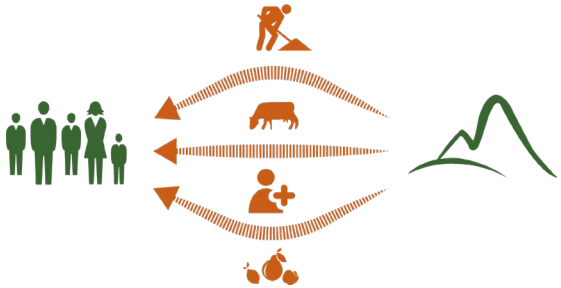


Figure1.30:The diagram used to express the state of unsustainable agriculture, by author

Economic Pressures: Agriculture in the area is facing economic pressures, including low prices for agricultural products, rising costs of inputs such as fertilizers and pesticides, and competition from larger-scale industrial agriculture.

Figure1.31:Large-scale mechanized production ,source:https://www.renature.co/articles/degraded-soil-can-be-improved-naturally/

Soil Degradation: The soil in the area has been heavily used for agriculture for over a century, and this has led to soil degradation. Soil compaction, nutrient depletion, and erosion are some of the problems that have resulted from intensive farming

Figure1.33:Soil that has lost its fertility,source:https://www.wur.nl/nl/nieuws/Soils-may-reduce-the-impact-of-drought-or-enhance-damage.htm

Monoculture: The agricultural practices in the area have become increasingly reliant on monoculture, which involves cultivating a single crop over a large area of land. This can lead to soil depletion, pest and disease problems, and reduced biodiversity.

Figure1.32:Monoculture crops,source:https://www.istockphoto.com/nl/search/2/film?phrase=monoculture

Water Pullotion: Agriculture requires water, and the current water management practices in the area have come under scrutiny. There have been concerns about over-extraction of groundwater, which can lead to reduced water availability and quality.

Figure1.34:Pulloted water ditch, by author

1.6.3 Outdate heritage conservation

The outdated heritage conservation problems in Frederiksoord and Wilhelminaoord can be attributed to several factors, including:

Historical Preservation Approaches: The heritage conservation approaches used in the past were focused on preserving individual buildings or structures rather than the wider landscape or social context. This approach often failed to take into account the broader social and economic changes that have affected the area over time.

Lack of Funding: Heritage conservation requires funding for maintenance and restoration, and the lack of adequate funds has been a major challenge. As a result, many of the historic buildings and structures in the area have fallen into disrepair or been lost over time.

Lack of Public Awareness: The importance of heritage conservation has not always been recognized by the wider public, which has contributed to the lack of funding and support for conservation efforts.

Changing Social and Economic Conditions: The social and economic conditions of the area have changed over time, which has made it more challenging to preserve the heritage of Frederiksoord and Wilhelminaoord. The decline of the agricultural sector and the aging population have led to a lack of resources and support for heritage conservation.

Zoning and Planning: The zoning and planning regulations in the area have sometimes been incompatible with heritage conservation efforts, which has made it difficult to preserve historic structures and landscapes.

1.7 Problem statement

1. low-active communities.
2. unsustainable agricultural activities.
3. outdated heritage conservation methods.

These three are the main issues that the colony is now facing, and they are mainly related to three topics: agriculture, heritage and society. The causes of the problems are also grouped and organized to obtain the schematic diagram shown in the figure P1.40

To summarize the above research on the history and the site itself, agriculture influenced every aspect of colonial heritage, from the establishment of spatial forms to the development of the heritage landscape in later years, which was greatly influenced by agricultural activities. In turn, the current agricultural development is limited by heritage conservation, which has caused a series of problems in the local society. Therefore, the future research direction will focus on the relationship between agricultural development and heritage conservation, with the intention to build a new colonial heritage based on sustainable agriculture, while providing better living conditions for local residents.

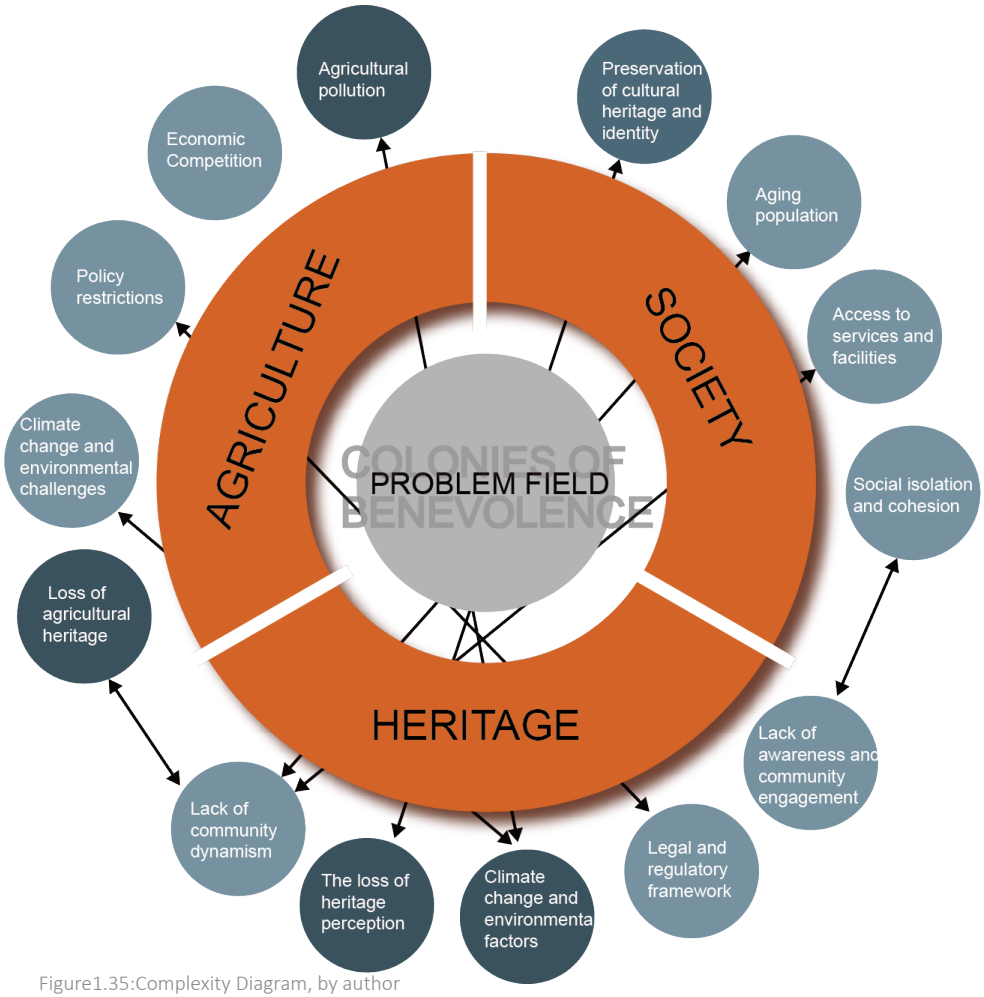


Figure1.35:Complexity Diagram, by author

1.8 Research question

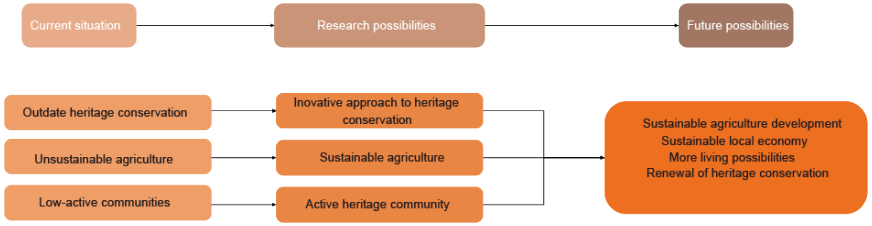


Figure1.36:Research possibilities and design possibilities arising from the problem statement, by author

To conclude: In response to the previous problem statement, I have presented my research questions, which are based on the possibility of problem orientation. Also in the next phase, I need to conduct further investigation and research on the colonial heritage for future design possibilities.

Through the above research and analysis, I came to the conclusion that the two most crucial points of the research question are the relationship between heritage and agriculture. Therefore, my research questions should be based on the development of agriculture and the preservation of heritage

Research question:
How to use or transform agricultural and heritage resources in Colonies of Benevolence site to improve the living conditions of local residents?

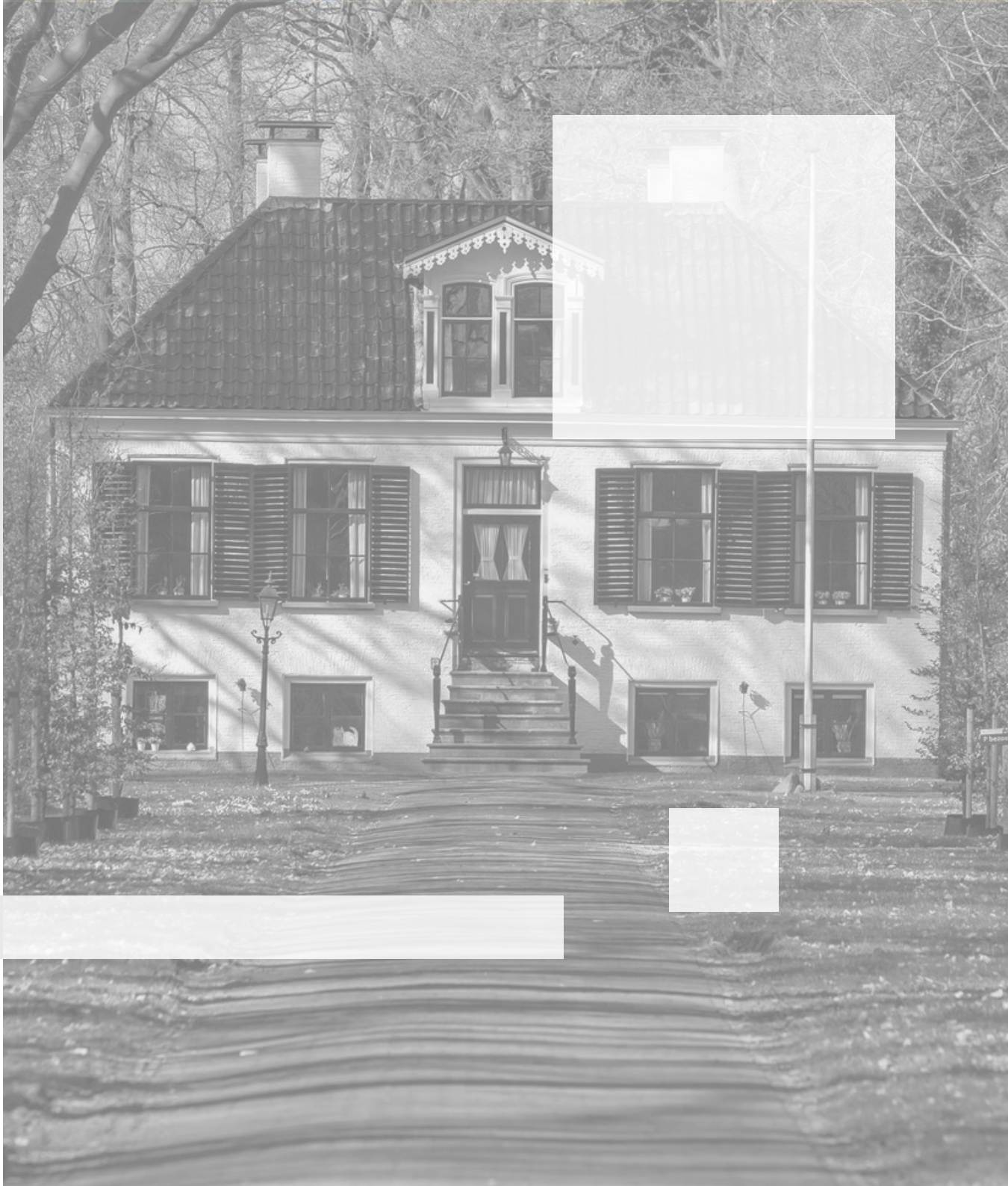
Sub-questions:

- What are the agricultural and heritage resources here ?
- How to tackle challenges for the local agriculture industry and heritage conservation
- What is the most valuable heritage for the colonial site?
- What local residents need?
- How will the design highlight the living condition?

This chapter looks for suitable theoretical support and research methods based on the content and ideas discussed in the previous section, and develops the final design outcome as well as the design methodology

Theoretical framework

02



2.1 Theory

2.1.1 Heritage as a sector, factor, and vector

The theory of heritage as a vector, factor, and sector has been developed and discussed by several scholars in the field of heritage studies. One of the earliest references to this framework is found in the work of Graham Fairclough, who in his book "Heritage as Social Action" describes heritage as both a process and a product, and discusses the ways in which heritage can be mobilized as a tool for social and economic development (Fairclough, 2013).

Another important reference for this framework is the work of Laurajane Smith, who in her book "Uses of Heritage" discusses the multiple ways in which heritage can be used and valued in different contexts, and argues that heritage should be understood as a dynamic and contested phenomenon that is shaped by a range of social and political forces (Smith, 2006).

In the context of colonial heritage, the theory of heritage as a vector, factor, and sector can be particularly useful for understanding the complex and often contested role of colonial heritage in shaping contemporary society and the economy. As a vector, colonial heritage can be mobilized to achieve broader social and economic goals, such as community development or tourism promotion. As a factor, colonial heritage can shape the identity and character of a place, and influence the way people think and feel about it. As a sector, colonial heritage can be the focus of specific industries and activities related to heritage preservation and interpretation.

By integrating the theory of heritage as a vector, factor, and sector with colonial heritage, designers and policymakers can develop more informed and sustainable approaches to heritage management and design. This could involve a range of strategies, from incorporating colonial heritage into the design of public spaces and buildings, to developing heritage-based tourism products that highlight the unique history and cultural heritage of the area.

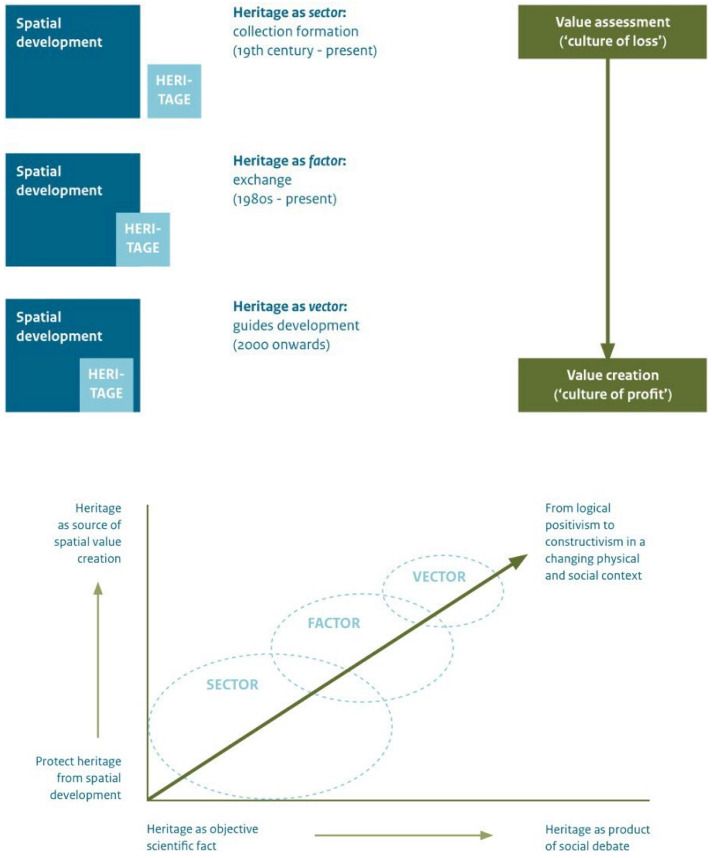


Figure2.1:Theoretical structure, from:European Planning Studies, 25 (9), 1654-1672

2.1.2 Agroecology

Agroecology theory has been widely discussed and debated by researchers and practitioners in the field of agriculture and sustainable development. For example, Altieri and Toledo (2011) argue that agroecology represents a paradigm shift from conventional agriculture towards more sustainable and resilient systems that are better able to meet the needs of both humans and the environment. Similarly, Wezel et al. (2009) argue that agroecology has the potential to transform agriculture by promoting a more holistic and integrated approach to farming that is based on ecological principles.

In the context of colonial heritage, agroecology theory can provide a valuable perspective on the design and management of agricultural landscapes that are historically and culturally significant. By integrating the principles of agroecology into the design of agricultural heritage sites, designers and managers can create more effective and sustainable strategies for preserving and promoting agricultural heritage.

For example, designers and managers can apply agroecological principles to the management of traditional agricultural practices such as crop rotation, intercropping, and cover cropping, which have been used in many colonial agricultural systems. They can also apply agroecological principles to the design of new agricultural systems that are based on traditional ecological knowledge and local culture, while also promoting ecological health and sustainability.

In addition, agroecology theory emphasizes the importance of social justice in agricultural systems, which is also relevant to the colonial heritage context. By promoting access to land, food security, and labor rights, designers and managers can create more equitable and sustainable agricultural systems that support the needs and aspirations of local communities.

Overall, the integration of agroecology theory into the design and management of colonial agricultural heritage sites can provide a valuable framework for creating more effective and sustainable strategies for preserving and promoting agricultural heritage.

2.2 Methodology Framework

The theory applied in this project is also based on the three main themes of heritage, agriculture and society. The overall direction of the research is in a linear relationship, and I hope to derive the appropriate theoretical support and design rationale from each phase of the research, in such a way that my focus remains within a reasonable logical range.

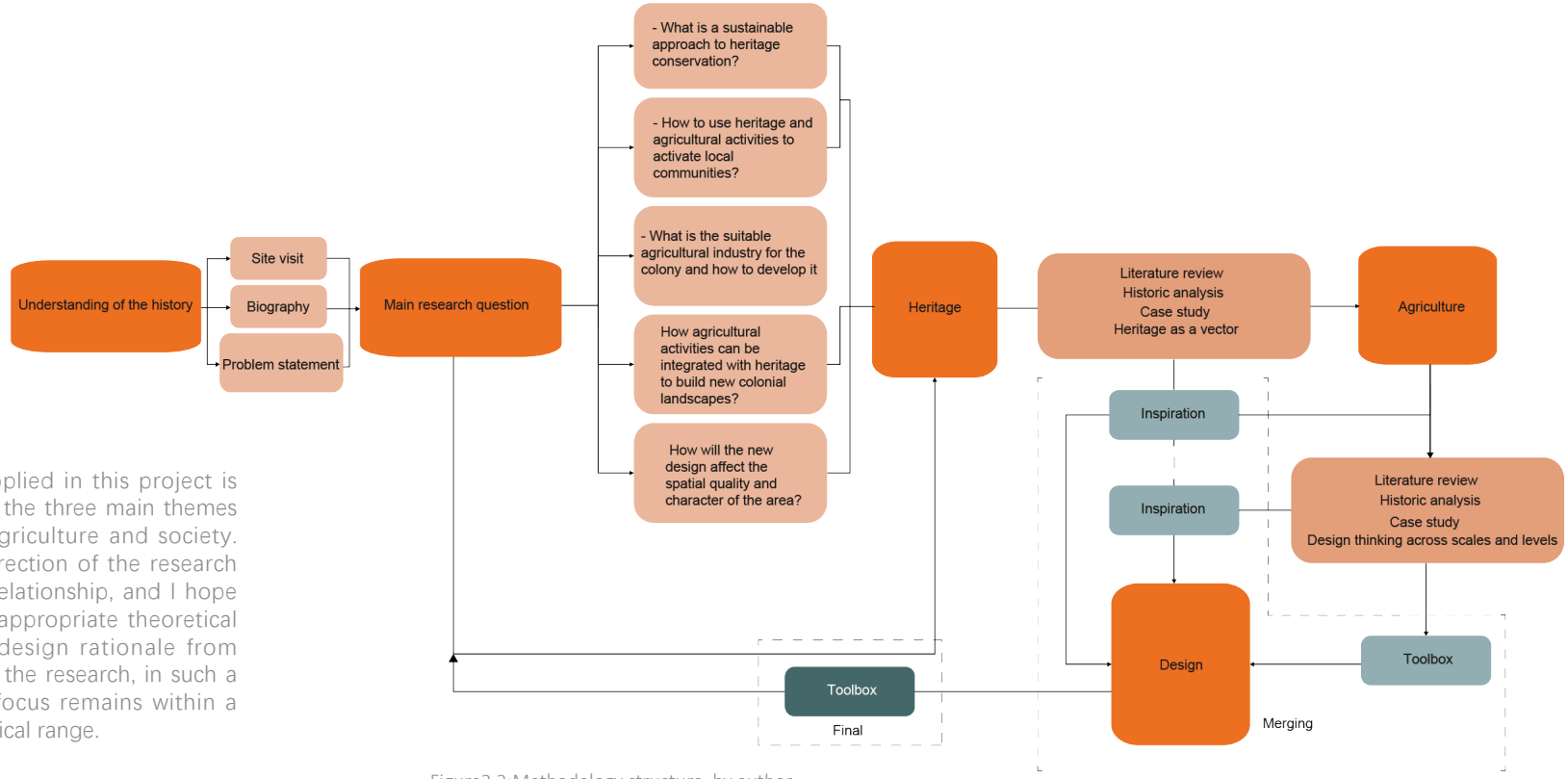


Figure2.2:Methodology structure, by author

2.3 Milestones

Based on the previous description of the overall methodological framework, I have reached a structural expectation for the outcome of my next phase of research and design as shown in the figure. On the basis of a problem-oriented approach, targeted research and analysis will be conducted to find corresponding points of inspiration and concern. On this basis, appropriate solutions are sought. The result will be a design toolset specific to the site itself, which will lead to an overall design enhancement of the colonial heritage.

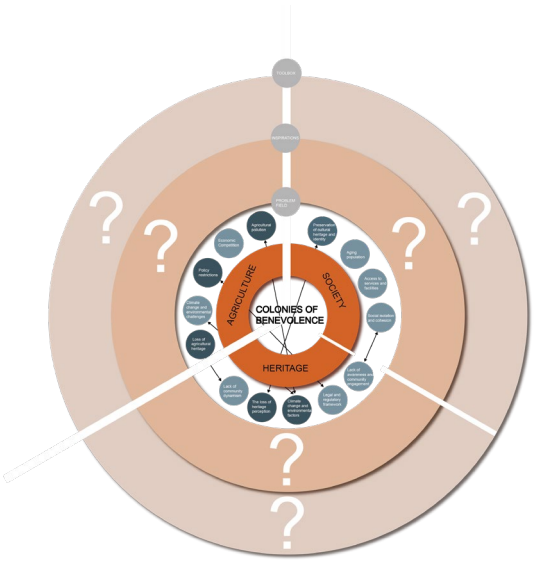


Figure2.6:Full structure, by author

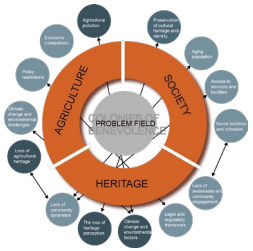


Figure2.3:Problem field, by author

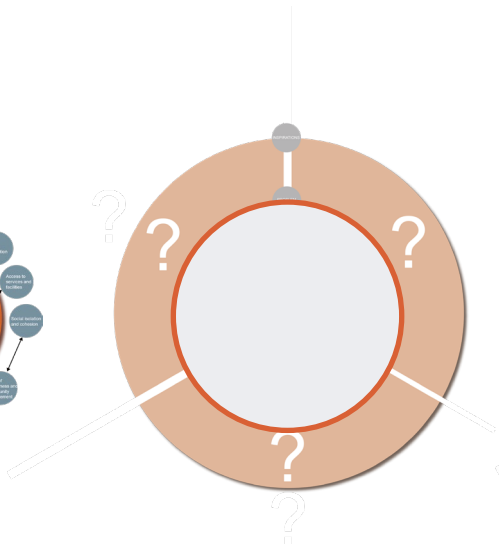


Figure2.4:Inspiration, by author

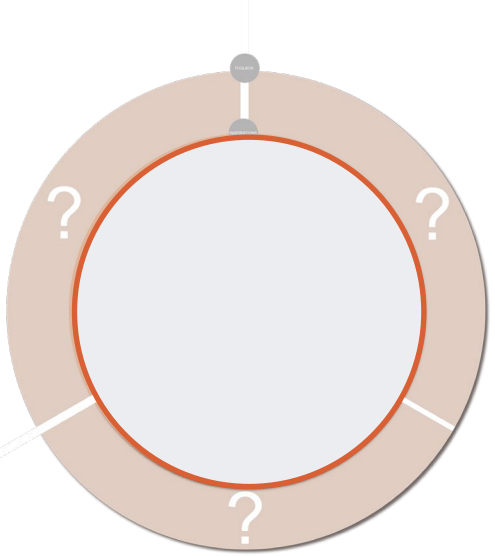
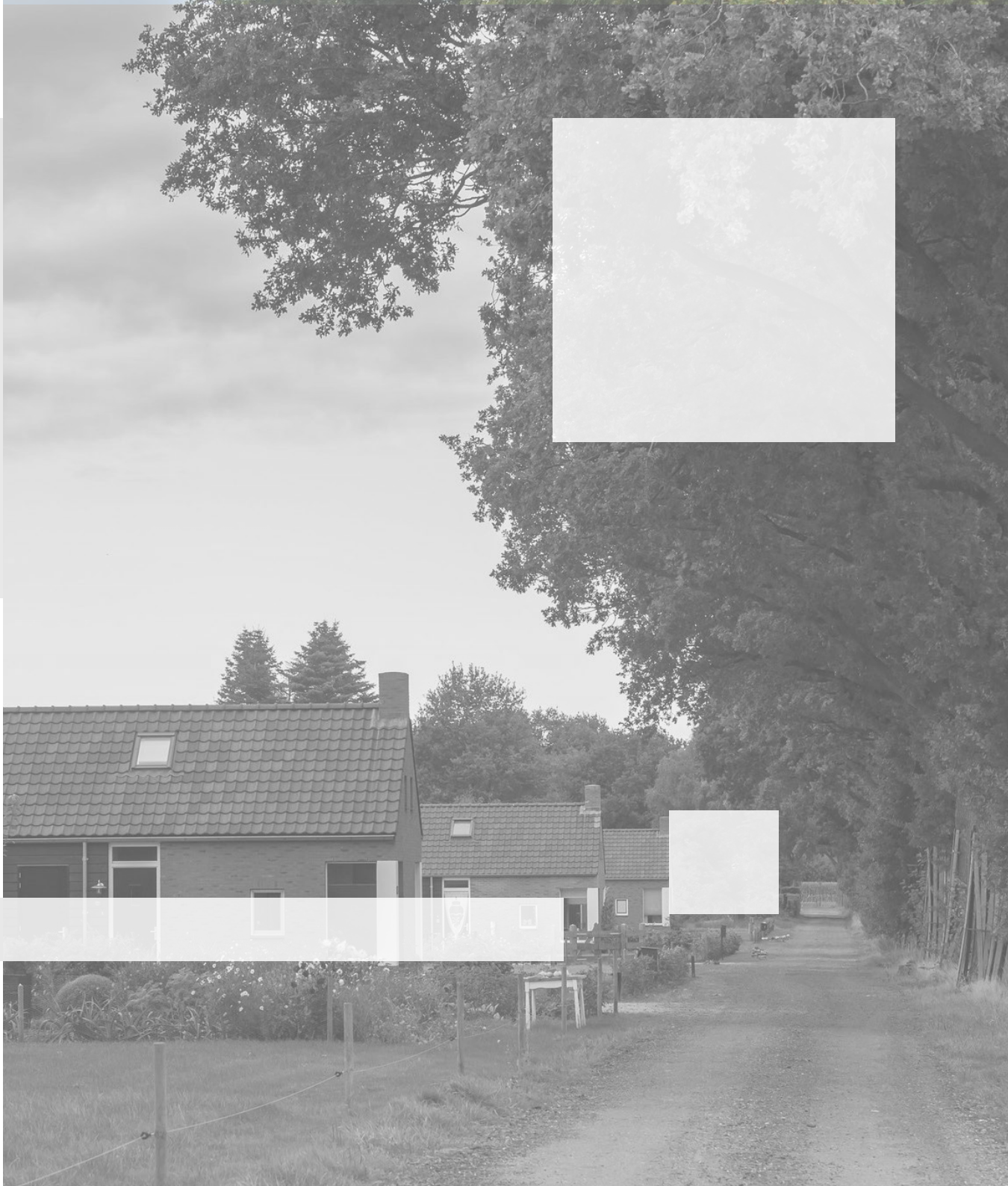


Figure2.5:Toolbox, by author

In this chapter, I mainly use the heritage theory to look at specific colonial heritage, which can exist as an entity and be recognized as an idea at the same time. So after my initial introduction to the colonial heritage I sorted and evaluated them and ended up with some elements of the heritage itself that could inspire the design

The role as a heritage

03



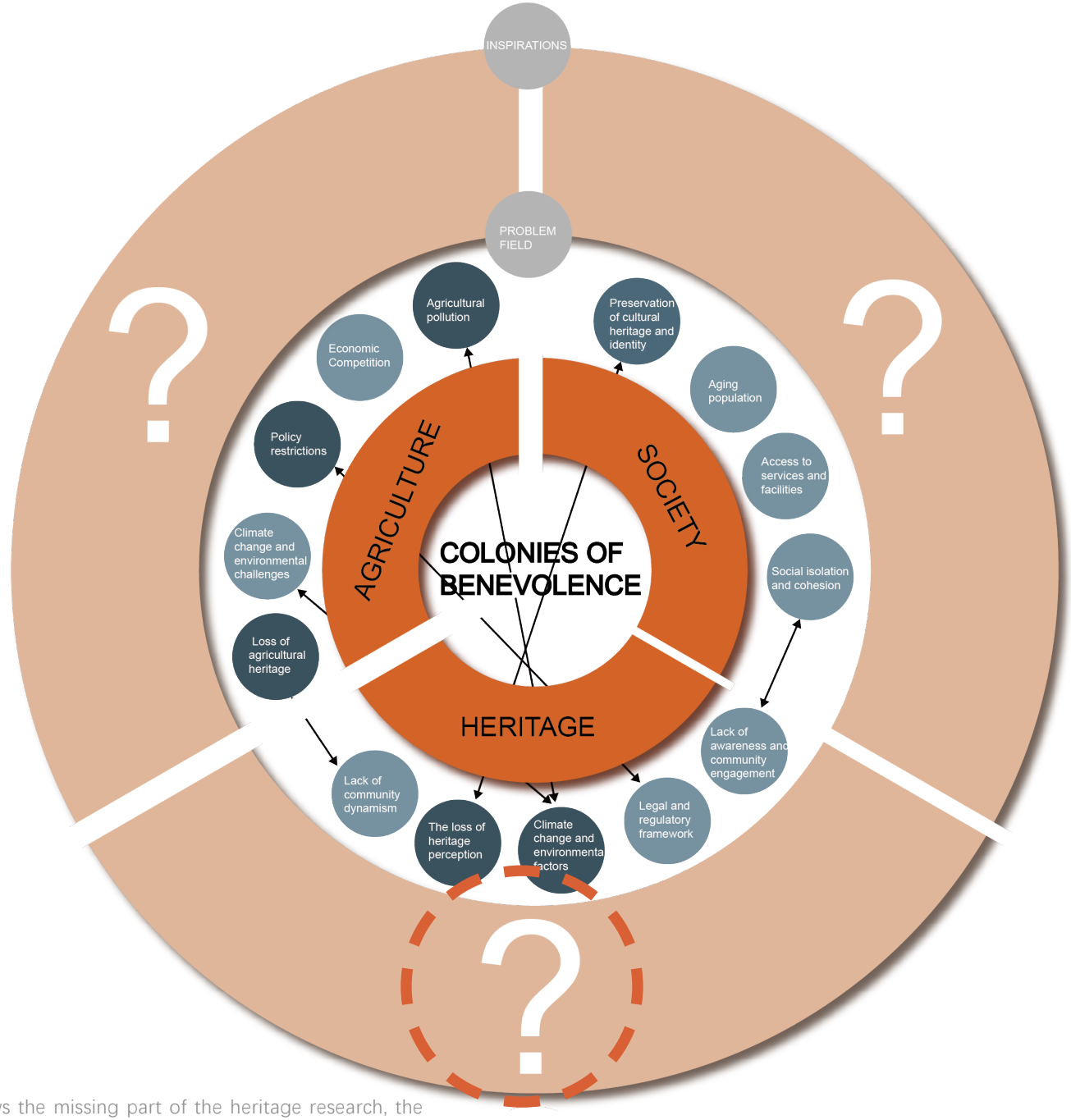


Figure3.1 The diagram shows the missing part of the heritage research, the missing part is the final result I want to get from this chapter., by author

3.1 Key Heritage Components and their Interrelations

3.1.1 Architectural and Built Environment

Colonial Housing

The residential buildings within the Colonies of Benevolence showcase various architectural styles and spatial arrangements, reflecting the changing living conditions and social structures of the inhabitants over time. In the early days, housing consisted of simple, functional designs. The compact layout of these dwellings facilitated communal living and promoted a sense of interdependence among residents. The use of local materials like brick and timber, coupled with modest scales, ensured that the houses were cost-effective and easy to maintain. These early buildings typically featured a pitched roof, small windows, and modest ornamentation, emphasizing functionality over aesthetics.

Figure3.2: the trsformation process of the colonial farm in the beginning, from the local museum.

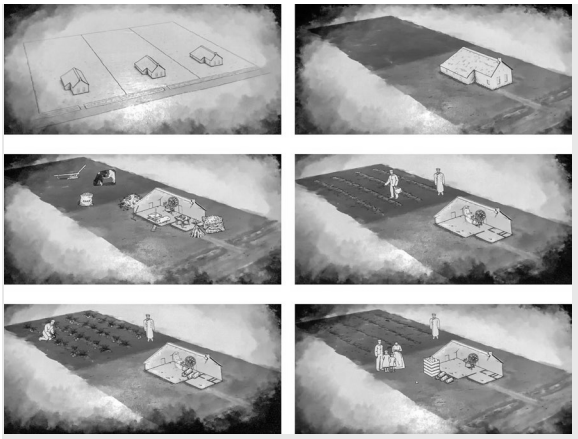


Figure3.3: the layout of the original colonial house, from https://www.flickr.com/photos/kolonienvanweldadigheid/albums/72157670148555260

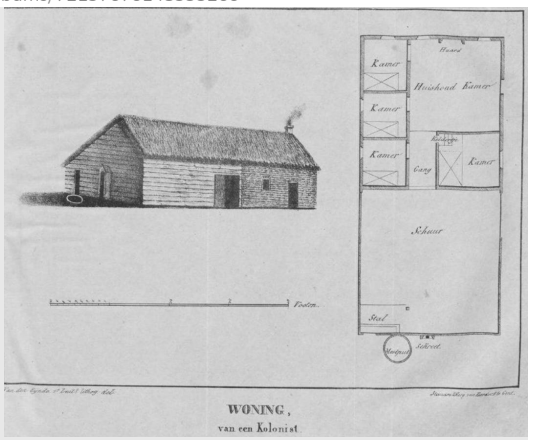


Figure3.4: Koloniën van Weldadigheid Directeurswoning in Frederiksoord (Drents Archief)

Figure3.6 Pear Alley in front of the Horticultural School in Frederiksoord, around 1920 (Maatschappij van Weldadigheid).

Figure3.7 Old postcard of the former post office, Frederiksoord, circa 1900-1920, source: Koloniën van Weldadigheid

Institutional buildings

The administrative buildings within the Colonies of Benevolence, such as offices, schools, and hospitals, played a crucial role in the management and oversight of the colonies. These structures were strategically placed to ensure efficient administration and control, with important facilities often located at key intersections or in close proximity to residential areas. (P3.5) The architecture of these buildings reflected their importance and function, with more formal and imposing designs intended to convey authority and discipline.

The spatial organization of the administrative buildings was designed to facilitate efficient communication and movement among the various institutions, as well as to ensure a clear hierarchy of power and control. This was achieved through the careful placement of buildings, the use of visual cues and landmarks, and the creation of direct sightlines between key facilities. The administrative buildings were also integrated into the broader spatial organization of the colonies, with the arrangement of streets, paths, and open spaces designed to promote efficient movement and interaction

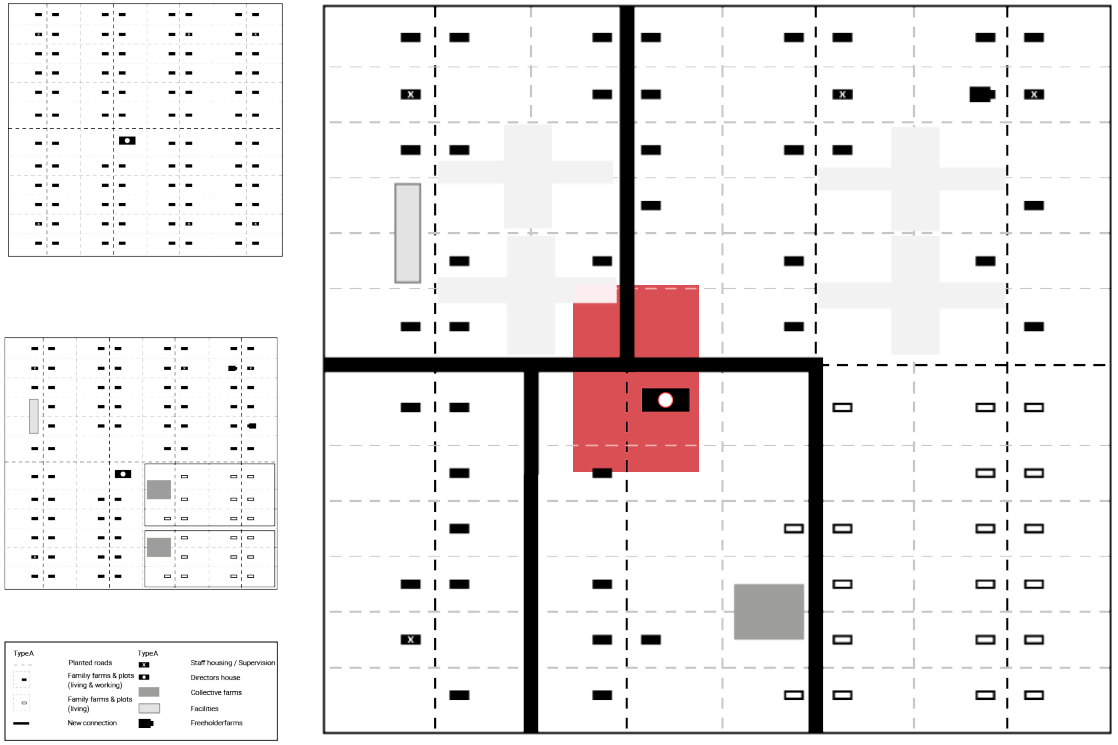


Figure3.5 the location of the colonial institutions, it shows the liner structure also., by author.

Religious Structures

The religious structures within the Colonies of Benevolence played a central role in the spiritual lives of the inhabitants and the moral underpinnings of the colonies. Churches and chapels were often designed to be simple and unassuming, with a focus on fostering a sense of humility and piety among the residents. The placement of religious structures within the landscape reinforced the colonies' overarching social and ideological goals, providing focal points for communal gatherings and shared experiences.

The spatial organization of the religious structures within the Colonies of Benevolence was carefully planned to ensure their visibility and accessibility within the community. Churches and chapels were often located at prominent locations, such as the center of a village or at the intersection of major streets, ensuring that they were easily accessible and served as a constant reminder of the colonies' moral values. (P3.9)The design of these religious structures, which often featured tall spires, large windows, and simple ornamentation, further reinforced their significance within the community and the landscape.

Figure3.8 the colonial church, form google image.

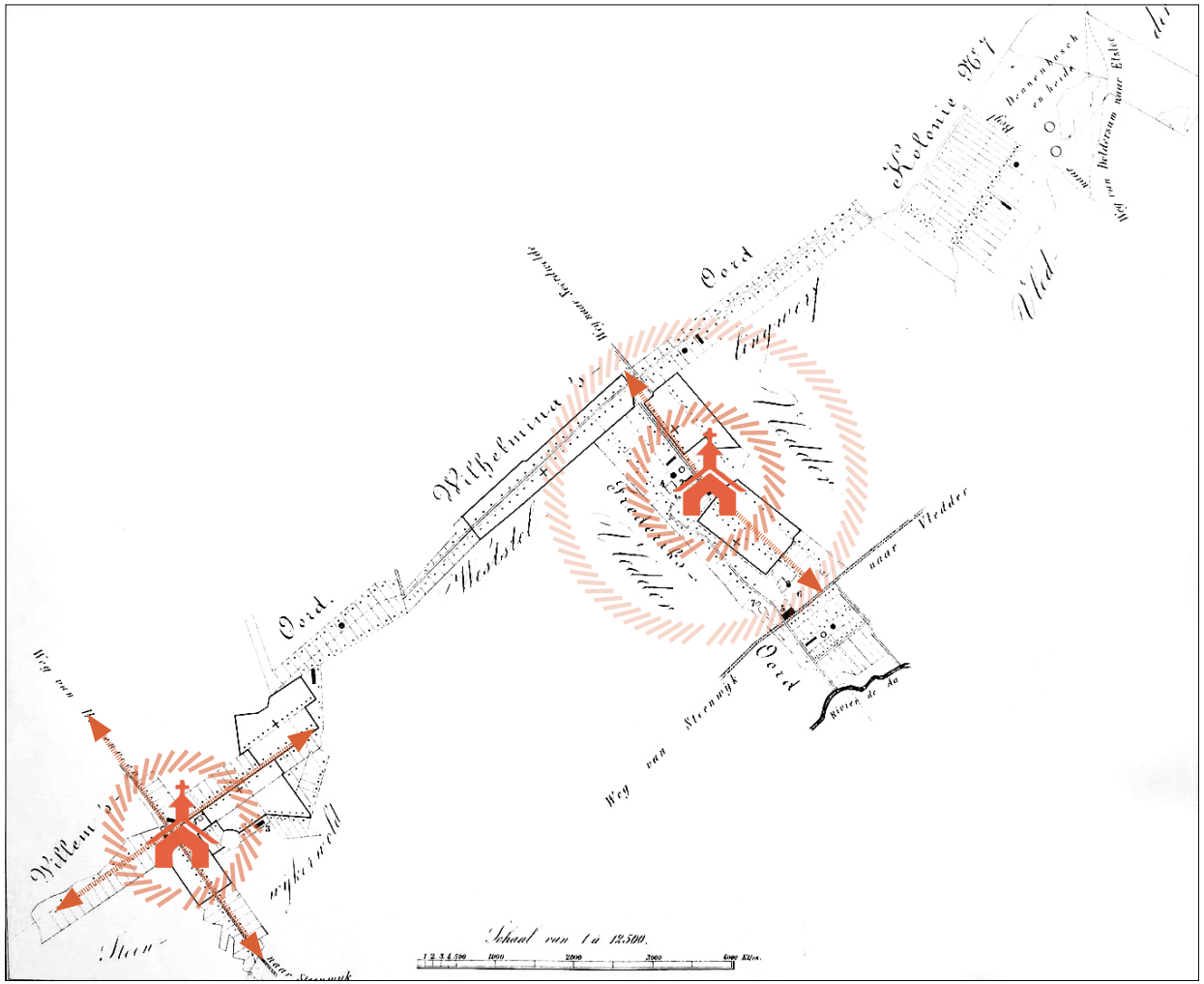


Figure3.9 the service radiation of the colonial church. by author, source from https://www.flickr.com/photos/kolonienvanweldadigheid/albums/72157670148555260

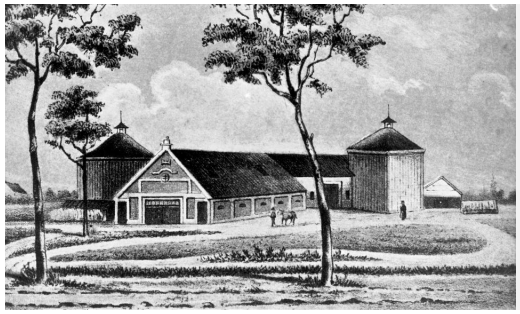


Figure3.10 Hoeve Koning Willem III at Frederiksoord, page from Jaarboekje Erica (Maatschappij van Weldadigheid).

Figure3.11 Office of the Society at Frederiksoord, published by HH Specht, circa 1945 to 1955 (Drents Archive).

Workshops and Production Facilities

The workshops and production facilities within the Colonies of Benevolence reveal the importance of self-sufficiency and economic sustainability in the colonies' development. These structures, which include various agricultural buildings, craft workshops, and industrial spaces, were designed to support the colonies' diverse economic activities and provide employment opportunities for the residents. The architecture of these buildings is often functional and utilitarian, with an emphasis on practicality and efficiency.

The spatial organization of the workshops and production facilities within the Colonies of Benevolence was carefully planned to facilitate efficient production and distribution processes, as well as to minimize potential conflicts between different land uses and activities. The buildings were typically arranged in clusters or along key transportation routes, with clear boundaries and buffer zones separating them from residential areas and other sensitive land uses. The layout and design of these facilities were also closely tied to the colonies' natural resources and environmental constraints, with the placement of buildings, infrastructure, and other elements designed to optimize resource use and minimize potential impacts on the landscape.

The integration of workshops and production facilities into the broader spatial organization of the Colonies of Benevolence was crucial to the site's overall economic success and sustainability. By carefully planning the location, layout, and design of these facilities, the colonies were able to maintain a delicate balance between economic production and the preservation of their unique cultural and natural heritage. This balance remains an essential aspect of the site's heritage value and a key consideration for ongoing conservation and management efforts.

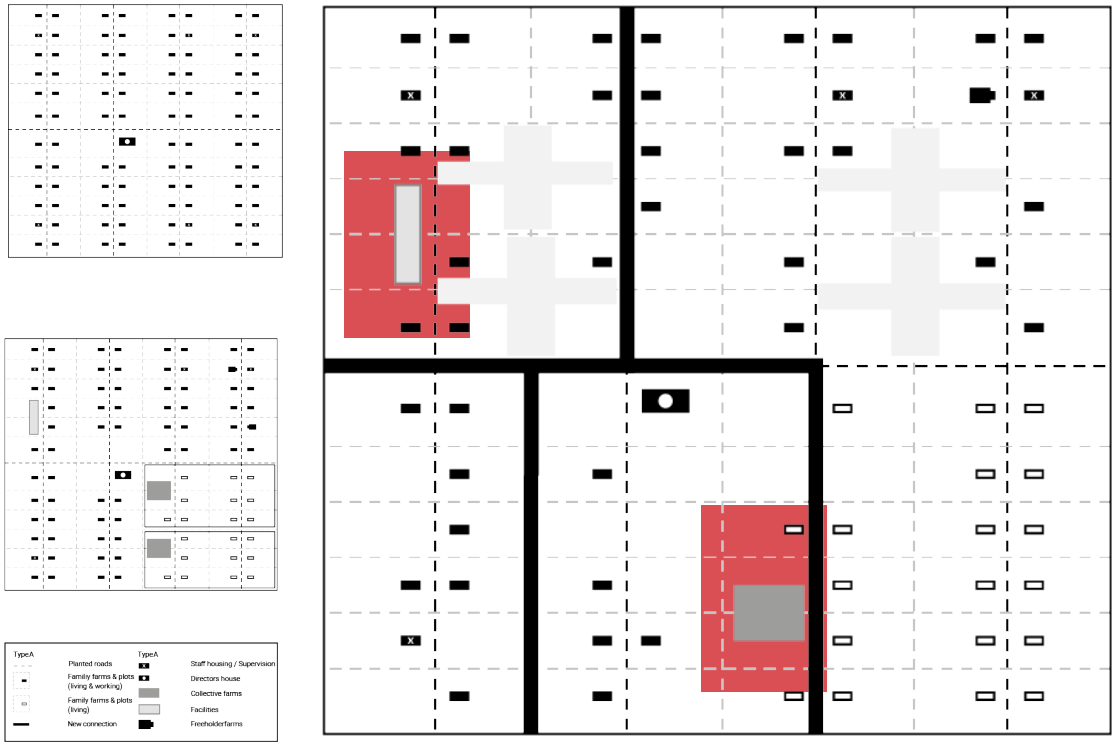


Figure3.12 the strcuture of the colonial facilities, by author.

3.1.2 Cultural Practices and Traditions

Agricultural Traditions and Techniques

The Colonies of Benevolence have a long history of agricultural practices and techniques, which have played a crucial role in shaping the site's distinctive cultural landscape and identity.(P3.13) Over the years, the colonies have been home to a diverse range of crops and livestock, with the cultivation and breeding methods evolving in response to changing social, economic, and environmental conditions. Some of the key agricultural traditions that have been practiced in the Colonies of Benevolence include mixed farming, crop rotation, and the use of organic fertilizers and pest control methods.(p3.14)

Figure3.13 The origional reclamation of the colonial land. From:Rijksmuseum Amsterdam

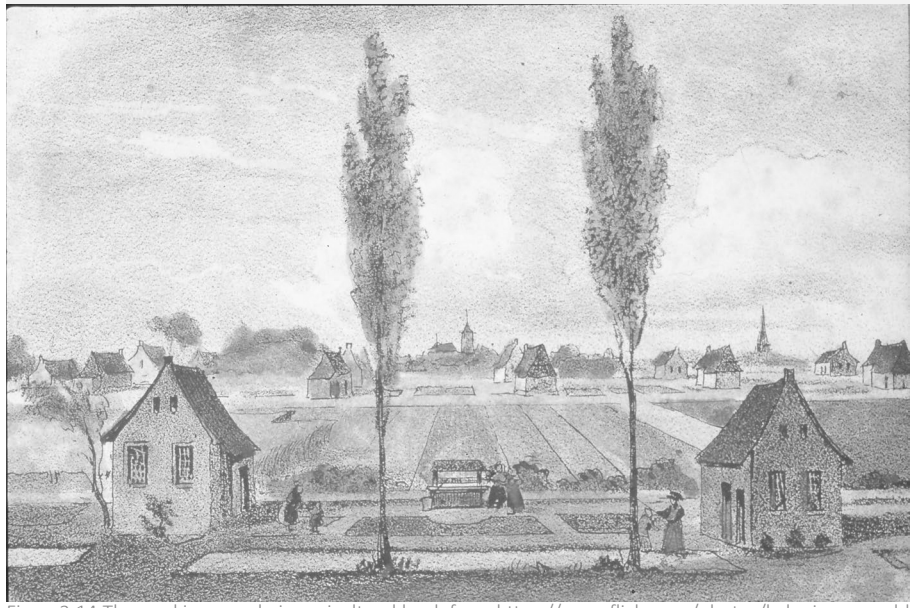


Figure3.14 The working people in agricultural land, from:https://www.flickr.com/photos/kolonienvanweldadigheid/52039684359/in/album-72157670148555260/

Mixed farming

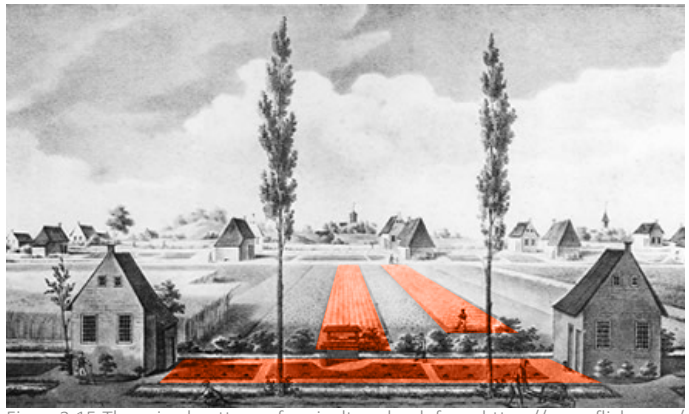


Figure3.15 The mixed pattern of agriculture land, from https://www.flickr.com/photos/kolonienvanweldadigheid/

Mixed farming, which involves the cultivation of a variety of crops and the raising of livestock on the same farm, has been a central aspect of the Colonies of Benevolence's agricultural heritage. This approach was favored by the founders because it allowed the colonies to maintain a high degree of self-sufficiency and ensured a balanced diet for the residents. Over time, mixed farming has evolved to incorporate a range of different crops and livestock, with the specific mix being influenced by factors such as market demand, technological advancements, and the availability of resources.

Crop rotation

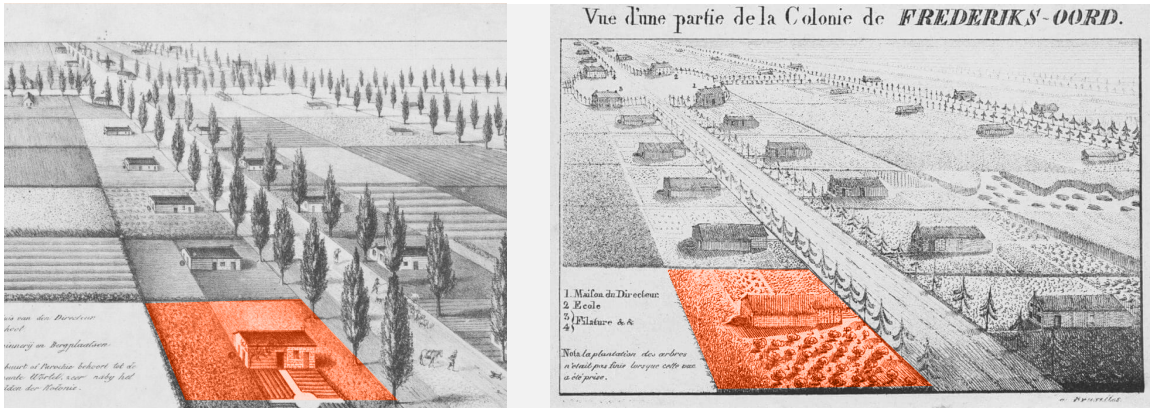


Figure3.16 The picture shows the division of the crops, from https://www.flickr.com/photos/kolonienvanweldadigheid/

Crop rotation, which involves the systematic alternation of different crops in the same field over time, is another important agricultural tradition in the Colonies of Benevolence. This practice has been employed to maintain soil fertility, reduce the risk of pest infestations, and optimize the use of available land and resources. Crop rotation has been particularly important in the Colonies of Benevolence due to the site's relatively poor soil quality and limited natural resources. By carefully planning and managing crop rotations, the colonies have been able to sustainably intensify agricultural production and minimize potential environmental impacts.

organic fertilizers

Figure3.17 The picture shows the farmers are working on the land with the traditional ways, from https://www.flickr.com/photos/kolonienvanweldadigheid/

Figure3.18 The picture shows the unferterlized friut trees, from https://www.fruithof-frederiksoord.nl/

The use of organic fertilizers and pest control methods is another significant aspect of the Colonies of Benevolence's agricultural heritage. The founders recognized the importance of maintaining a healthy and balanced ecosystem and sought to promote sustainable farming practices that minimized the use of synthetic chemicals and other potentially harmful inputs.(P3.17,P3.18) Over time, these practices have evolved to incorporate a range of different organic materials and biological controls, with the specific techniques and inputs being influenced by factors such as local availability, cost, and efficacy.

Craftsmanship and Trades

The Colonies of Benevolence have a rich history of craftsmanship and trades, which have played an important role in supporting the site's economic development and shaping its unique cultural identity. The colonies were home to a diverse range of skilled artisans and craftspeople, who contributed to the site's economic growth and social cohesion by producing high-quality goods and services for the local community and the wider region. Some of the key trades and crafts practiced in the Colonies of Benevolence include woodworking, metalworking, textiles, and pottery.

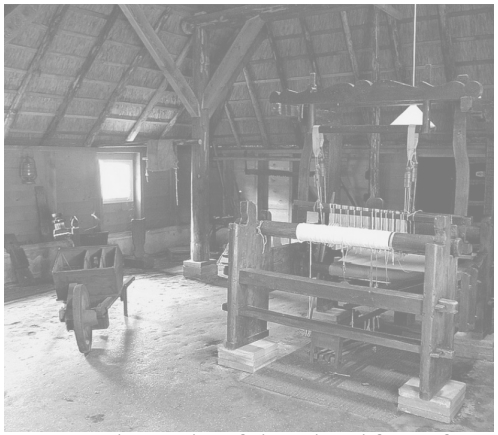


Figure3.19The textiles of the colonial farms, from: https://zoom.nl/foto/huisnijverheid/888515/undefined

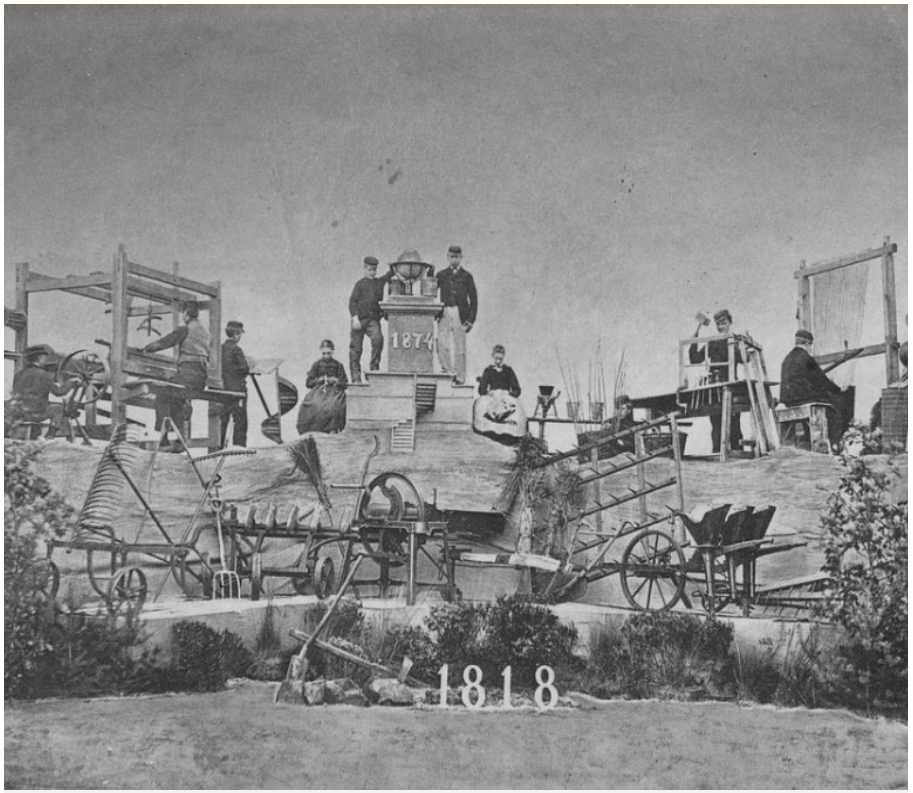


Figure3.20 The combination of all kinds of agricultural tools, from: https://zoom.nl/foto/huisnijverheid/888515/undefined

Woodworking

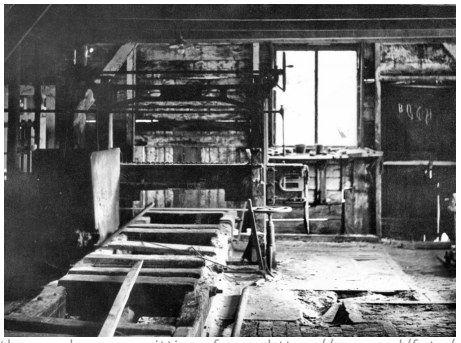


Figure3.21 The wood working institution and the workers are sitting, from: https://zoom.nl/foto/huisnijverheid/888515/undefined

Woodworking has been a central aspect of the Colonies of Benevolence's craftsmanship heritage, with skilled carpenters, cabinetmakers, and joiners producing a wide range of furniture, tools, and architectural elements. Woodworking techniques and styles have evolved over time in response to changes in materials, technology, and market demand, with the colonies' artisans developing a unique and distinctive aesthetic that reflects the site's cultural and environmental context.

Metalworking

P3.23 The workers from local factory, from https://www.flickr.com/photos/kolonienvanweldadigheid/albums/72157671170233706

Figure3.22 The metal tools built by local factory, from https://www.flickr.com/photos/kolonienvanweldadigheid/albums/72157671170233706

Metalworking is another important craft tradition in the Colonies of Benevolence, with blacksmiths, tinsmiths, and other metalworkers producing a diverse range of goods such as tools, agricultural implements, and decorative items. Metalworking techniques and styles have also evolved over time, with the colonies' artisans adapting to changes in materials, technology, and market demand. The metalworking tradition in the Colonies of Benevolence has been particularly important in supporting the site's agricultural and industrial development, as well as its ongoing conservation and restoration efforts.

Textiles

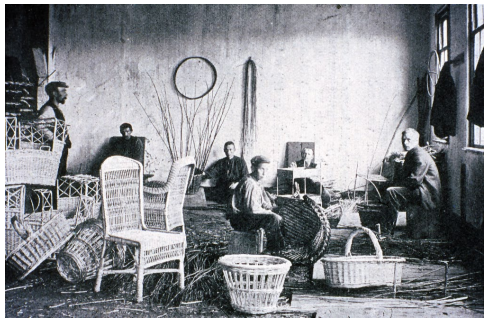



Figure3.23&24The Weavers, from https://www.flickr.com/photos/kolonienvanweldadigheid/albums/72157671170233706

Textiles and pottery are two other significant craft traditions in the Colonies of Benevolence, with weavers, spinners, potters, and other artisans producing a wide range of functional and decorative items for the local community and the wider region. Textile production in the colonies has historically involved the use of locally sourced materials, such as wool, flax, and hemp, with the specific techniques and styles being influenced by factors such as cultural traditions, resource availability, and market demand. The textile industry has played a crucial role in the Colonies of Benevolence's economic development, providing employment opportunities and generating income for the site and its residents.

pottery

Figure3.25&26 masonry pottery field, from https://ansichtkaartenbeurs.nl/kaarten/slikkerveer--in-4-luikzh11223

Pottery production in the Colonies of Benevolence has also been an important aspect of the site's craftsmanship heritage, with skilled potters producing a diverse range of ceramic items for both functional and decorative purposes. Pottery production in the colonies has been characterized by the use of locally sourced clay and other materials, as well as the development of distinctive techniques and styles that reflect the site's unique cultural and environmental context. The pottery industry has been particularly important in supporting the Colonies of Benevolence's agricultural and domestic activities, as well as its ongoing conservation and restoration efforts.

Cultural Events and Festivals

The Colonies of Benevolence have a rich tradition of cultural events and festivals, which have played an important role in fostering social cohesion, maintaining cultural continuity, and promoting the site's unique heritage. These events and festivals have typically been organized around key milestones in the agricultural calendar, such as planting, harvesting, and livestock breeding, as well as significant religious and cultural occasions. Some of the key cultural events and festivals that have been celebrated in the Colonies of Benevolence include the annual Harvest Festival, the Midsummer Festival, and various religious and commemorative observances.

The annual Harvest Festival is one of the most important cultural events in the Colonies of Benevolence, with residents coming together to celebrate the successful completion of the agricultural season and give thanks for the bounty of the harvest. The festival typically involves a range of activities, such as feasting, dancing, and the presentation of offerings, with the specific customs and traditions varying between different communities and over time. The Harvest Festival has been a key component of the Colonies of Benevolence's cultural heritage, helping to maintain a strong connection between the site's residents and their agricultural roots.

The Midsummer Festival is another significant cultural event in the Colonies of Benevolence, with residents coming together to celebrate the summer solstice and the abundance of the season. The festival typically involves a range of activities, such as bonfires, music, and storytelling, with the specific customs and traditions varying between different communities and over time. The Midsummer Festival has been an important aspect of the Colonies of Benevolence's cultural heritage, helping to promote a sense of unity and shared identity among the site's residents.

In addition to these seasonal events, the Colonies of Benevolence have also been home to a range of religious and commemorative observances, which have played an important role in maintaining cultural continuity and fostering a sense of shared history. These observances have typically involved a range of rituals, ceremonies, and other activities, with the specific customs and traditions varying between different communities and over time. The ongoing celebration of these events and festivals has been a key aspect of the Colonies of Benevolence's intangible cultural heritage, helping to preserve the site's unique identity and ensure its continued relevance for future generations.

Figure3.27&28&29 60th Float Parade in Frederiksoord, from https://www.rtvdrenthe.nl/nieuws/158856/jubileumcorso-frederiksoord-gaat-niet-door

Culinary Traditions and Food Culture

Culinary traditions and food culture have played a significant role in the daily life and cultural identity of the Colonies of Benevolence. The site's unique agricultural history and diverse population have given rise to a rich tapestry of culinary practices that reflect the interplay between local resources, cultural influences, and historical circumstances. These culinary traditions have not only provided sustenance for the residents of the Colonies but have also served as a means of social bonding, cultural exchange, and the preservation of intangible heritage.

One notable aspect of the Colonies' food culture is the emphasis on locally sourced, seasonal ingredients. Historically, the agricultural activities within the Colonies have centered around the production of staple crops such as potatoes, grains, and vegetables, as well as livestock farming for dairy, meat, and wool. These agricultural products have formed the basis for many traditional dishes and recipes, which have been passed down through generations and continue to be enjoyed by residents and visitors alike.

The Colonies of Benevolence's culinary traditions are also characterized by a strong sense of frugality and resourcefulness, reflecting the site's historical context as a place of refuge and rehabilitation for the poor and disadvantaged. Residents of the Colonies have long practiced techniques such as pickling, preserving, and fermenting to extend the shelf life of seasonal produce and make the most of available resources. This practical approach to food preparation and consumption has given rise to a unique culinary heritage that emphasizes simplicity, functionality, and sustainability.

Another key aspect of the Colonies' food culture is the role of communal dining and shared meals in fostering social cohesion and cultural exchange. Many of the traditional dishes and recipes associated with the Colonies are designed to be prepared and consumed collectively, with residents coming together to share food, stories, and camaraderie. This tradition of communal dining has not only helped to maintain a strong sense of community within the Colonies but has also provided a means for residents to learn from one another and develop a shared cultural identity.

In recent years, there has been a growing interest in the Colonies of Benevolence's culinary traditions and food culture, both among residents and visitors to the site. This renewed interest has led to a resurgence of traditional recipes, cooking techniques, and food-related events, which are helping to preserve the site's intangible cultural heritage and promote a greater appreciation for its unique history and identity.

Figure3.30 P3.31 food in traditional festivals, from https://dorpsgemeenschap-fw.nl/

Figure3.32 food in traditional festivals, from https://dorpsgemeenschap-fw.nl/

Figure3.33 Local food production, from https://dorpsgemeenschap-fw.nl/activiteiten/

3.2 Heritage Assessment

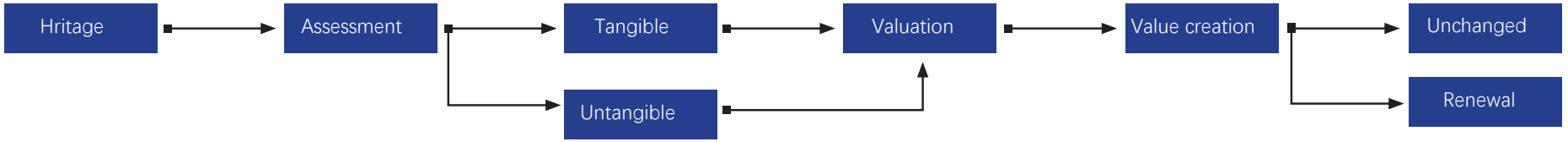


Figure3.34 Heritage accessment stucture, by author

Based on the theories discussed in the previous section, I have carried out the analysis and evaluation process shown in the diagram, evaluating the tangible and intangible heritage separately, determining the final values to be retained and documenting what has been discussed as inspiration for the subsequent design

3.2.1 Tangible elements

Agricultural Landscapes

Figure3.35 Picture shows the agriculture landscape , https://www.flickr.com/photos/kolonienvanweldadigheid/albums/72157670148555260

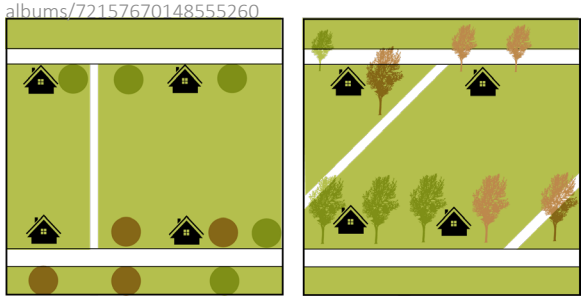


Figure3.36 Diagram shows the agriculture landscape , by author

Values:
The open space creates a unique landscape, giving the visitors a feeling of harmony.

Layout Structure

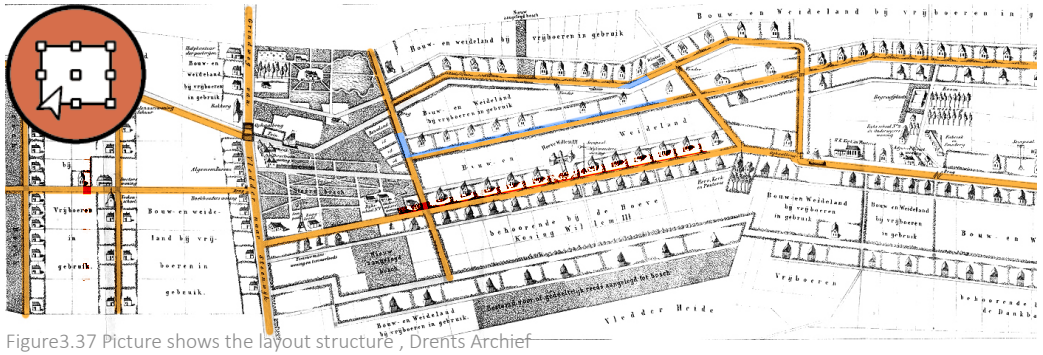


Figure3.37 Picture shows the layout structure , Drents Archief

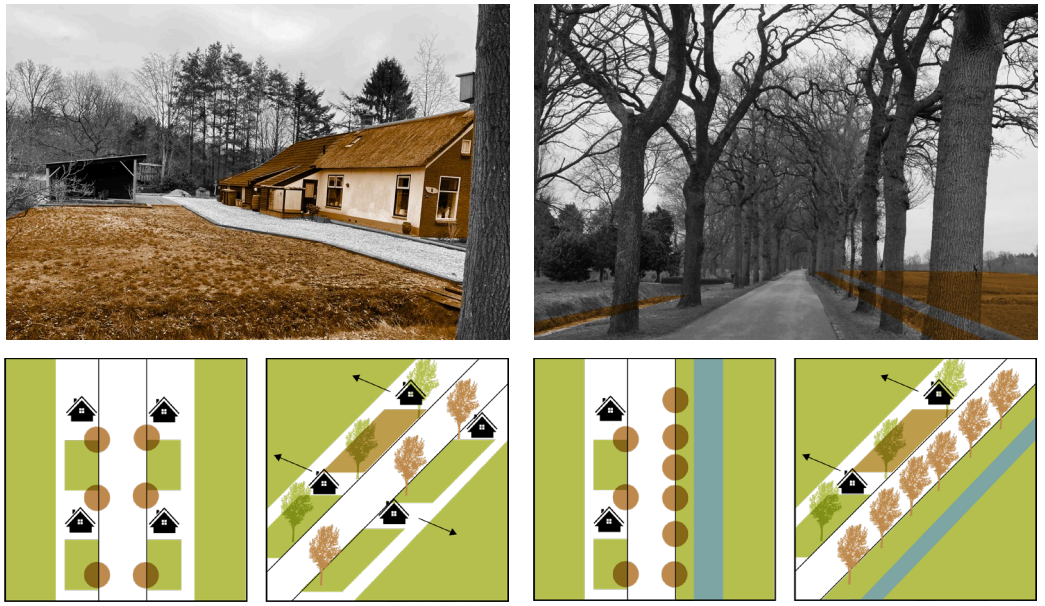


Figure3.38 Diagram shows the layout structure , by author

Values: The structure represents the history and development progress of this area. The structure is not satisfying the community around.

Colonial Housing

Figure3.39 picture shows the new colonial house , https://www.flickr.com/photos/kolonienvanweldadigheid/albums/72157670148555260

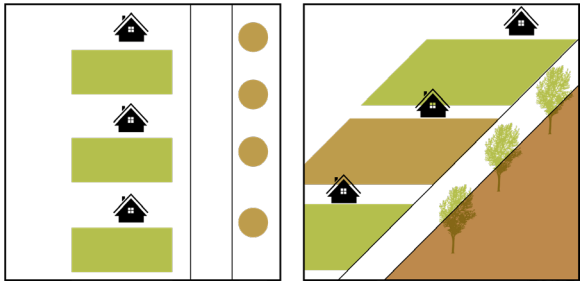


Figure3.40 Diagram shows the colonial house , by author

Values:
The old/new colonial houses keep their traditional style, creating a great historical phenomenon for this area. It creates a barrier to neighbourhood communication. It is not saving space.

Institutional buildings

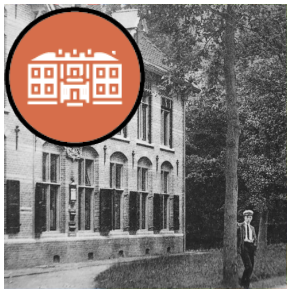
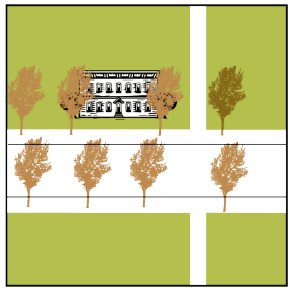


Figure3.41 picture shows the telegraph office in Frederisksoord,collection Society of Benevolence



P3.42 Diagram shows institutional buildings , by author

Values:
The old/new colonial houses keep their traditional style, creating a great historical phenomenon for this area. It creates a barrier to neighbourhood communication. It is not saving space.

Workshops and Production Facilities

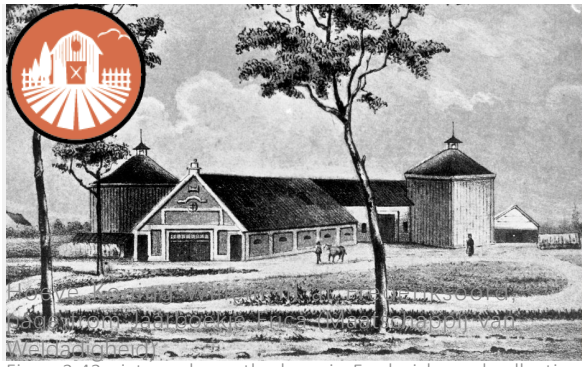


Figure3.43 picture shows the barn in Frederisksoord,collection Society of Benevolence

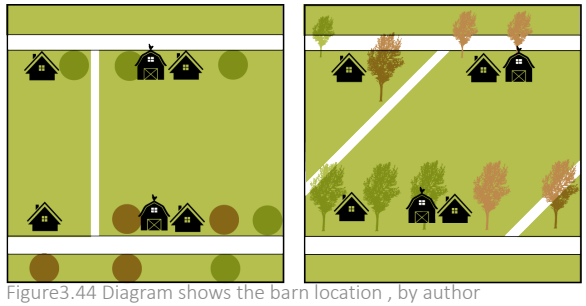


Figure3.44 Diagram shows the barn location , by author

Values:
The old/new colonial houses keep their traditional style, creating a great historical phenomenon for this area. It creates a barrier to neighbourhood communication. It is not saving space.

Avenue

Figure3.45 picture shows the avenue , from collection Society of Benevolence,Miranda Drenth's photo

Figure3.46 picture shows the avenue , from collection Society of Benevolence,Miranda Drenth's photo

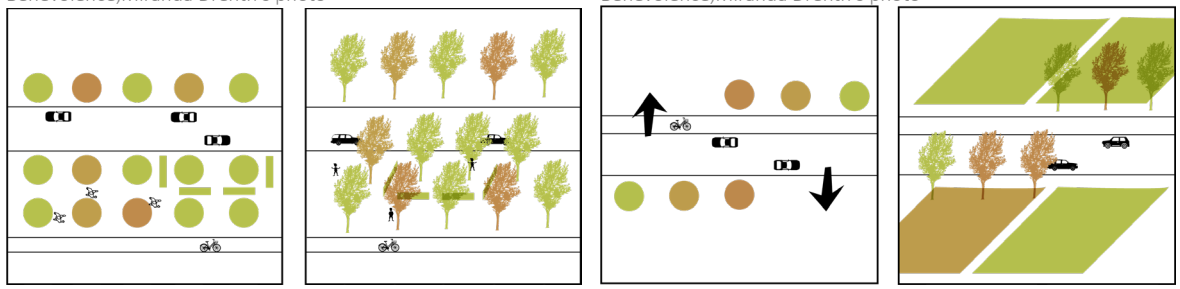


Figure3.47 diagrams show the avenue stucture , by author

Values:The linear avenue creates a solid spatial gesture that we need to preserve. But the space outside the residential area lacks opportunities for more activities.

Irrigation and Drainage Systems

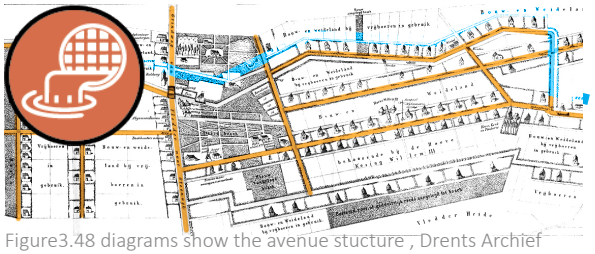


Figure3.48 diagrams show the avenue stucture , Drents Archief

Figure3.49 Clamation of the river , Drents Archief

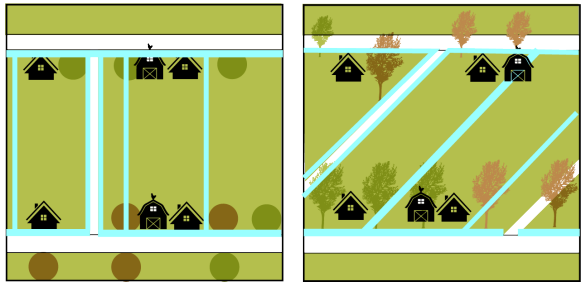


Figure3.50 diagram shows the ditch structure, by author.

Values:
The irrigation system has significant heritage value due to its historical, cultural, technological, and educational significance, representing collective efforts and advancements while enhancing the landscape.

Central Squares and Gathering Places

Figure3.50 Picture of the open grassland , Drents Archief

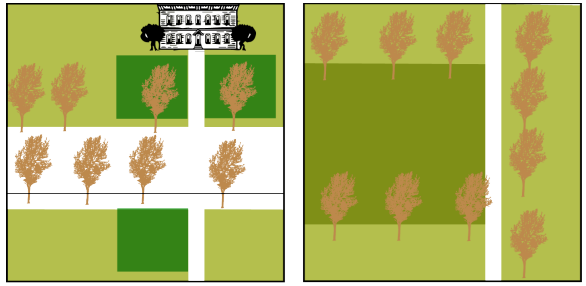


Figure3.51 Diagram shows the layout of the open land, by author.

Values:

They serve as tangible reminders of the communal ideals, social interactions, and collective aspirations that were integral to the colonies' foundation and growth. Preserving and celebrating these spaces is crucial for understanding and appreciating the heritage

Monuments and Memorials

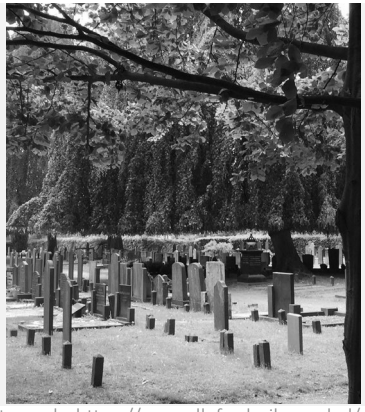


Figure3.52&53 Picture of the monuments yard , https://www.dlefrederiksoord.nl/index.php/afbeeldingen/begraafplaats-oranjelaan/wilhelminaoord-002-4

P3.54 Picture of the Stone Tomb Ruins, https://bijelsnatuurwinkel.nl/

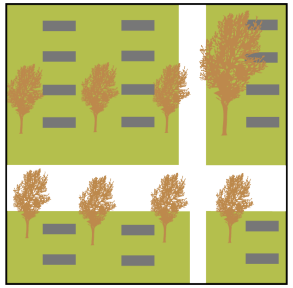


Figure3.55 diagram shows the spatial sturcture of the funeral yard, by author.

Values:

Monuments and memorials in Wilhelminaoord and Frederiksoord have significant heritage importance as they hold historical, cultural, and commemorative value. They represent the colonies' history, culture, and identity, honoring important events, individuals, and achievements. These landmarks provide educational and interpretive value, fostering a sense of place and identity, and serving as reminders of the colonies' heritage. Preserving them is crucial for maintaining the appreciation and understanding of the colonies' history and the contributions of those involved.

3.2.2 Intangible elements

Oral Histories and Storytelling

Figure3.56 Bennie Mensink and granddaughter Lotte admire the portrait Wouter Jansen made of the girl. PHOTO GERRIT

Figure3.57 museum guide explaining, from https://proefkolonie.nl/

Values:
Oral histories and storytelling hold significant heritage importance in Wilhelminaoord and Frederiksoord. They preserve personal narratives, transmit cultural knowledge, provide unique perspectives on historical events, highlight diverse voices, create personal connections, and fill historical gaps. Together, they contribute to a comprehensive understanding of the colonies' heritage and foster a sense of shared identity among the community.

Traditional Crafts and Skills

Figure3.58 traditional garden creation, from https://www.flickr.com/photos/kolonienvanweldadigheid/51598062297/in/album-72157670148555260/

Figure3.59 Artifacts made by local pottery artists, from https://dvhnlentefair.nl/workshop/

Values:
Preserving and promoting these crafts ensures the continuation of cultural heritage and fosters a sense of pride and belonging among residents.

Customs, Rituals, and Celebrations

Figure3.60 Flower Garden Wall Celebration, from https://dorpsgemeenschap-fw.nl/activiteiten/

Figure3.61 local traditional clothing, from https://proefkolonie.nl/

Values:
Customs, rituals, and celebrations have significant heritage importance as they reflect the cultural identity, historical continuity, communal bonding, and cultural expression of the colonies. They play a vital role in preserving the heritage and attracting cultural tourism.

Local Gastronomy and Culinary Traditions

Figure3.62 Local food market, from https://www.fruithof-

Figure3.63 Local vegetable market, from https://proefkolonie.nl/

Values:

The local gastronomy and culinary traditions reflect the historical and cultural heritage of the colonies, connecting to the land and agricultural practices of the past. These traditions foster a sense of community and social bonding, while also attracting tourists and contributing to the local economy. Preserving and promoting these culinary traditions is essential for understanding the colonies' history and cultural identity.

Traditional Agricultural Practices and Knowledge

Figure3.64 Female worker working in a fertilizer factory, from: https://www.flickr.com/photos/kolonienvanweldadighe id/51599783230/in/album-72157670148555260/

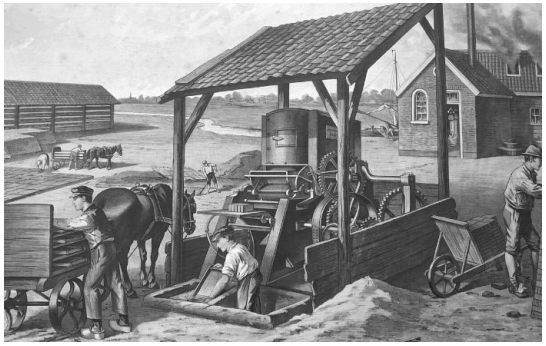


Figure3.65 Machine for making bricks, from: https://www. weldadigoord.nl/weldadige-oorden/kolonieschooltje/

Values:

The traditional agricultural practices and knowledge hold significant heritage importance due to their historical, cultural, ecological, and educational significance. They reflect the historical development of farming techniques, represent cultural identity, promote ecological sustainability, and provide valuable educational insights.

Community Governance and Social Structures

Figure3.66 Men working together, from: https://www.flickr.com/ photos/kolonienvanweldadigheid/

Values:

The community governance and social structures have significant heritage importance. They represent the collective values, unique social experiment, and fostered a sense of community.

3.3 Inspirations

Summary:
Through the research on the basic cognition of heritage and the way of using heritage evaluation, I have come up with some inspiration points. From another perspective, through the cognition of heritage as a factor or sector, the heritage itself brings The possibilities are classified and evaluated, including not only perceivable heritage elements, but also some intangible cultural heritage. These inspiration points will serve as the source of ideas or ideas for the design.

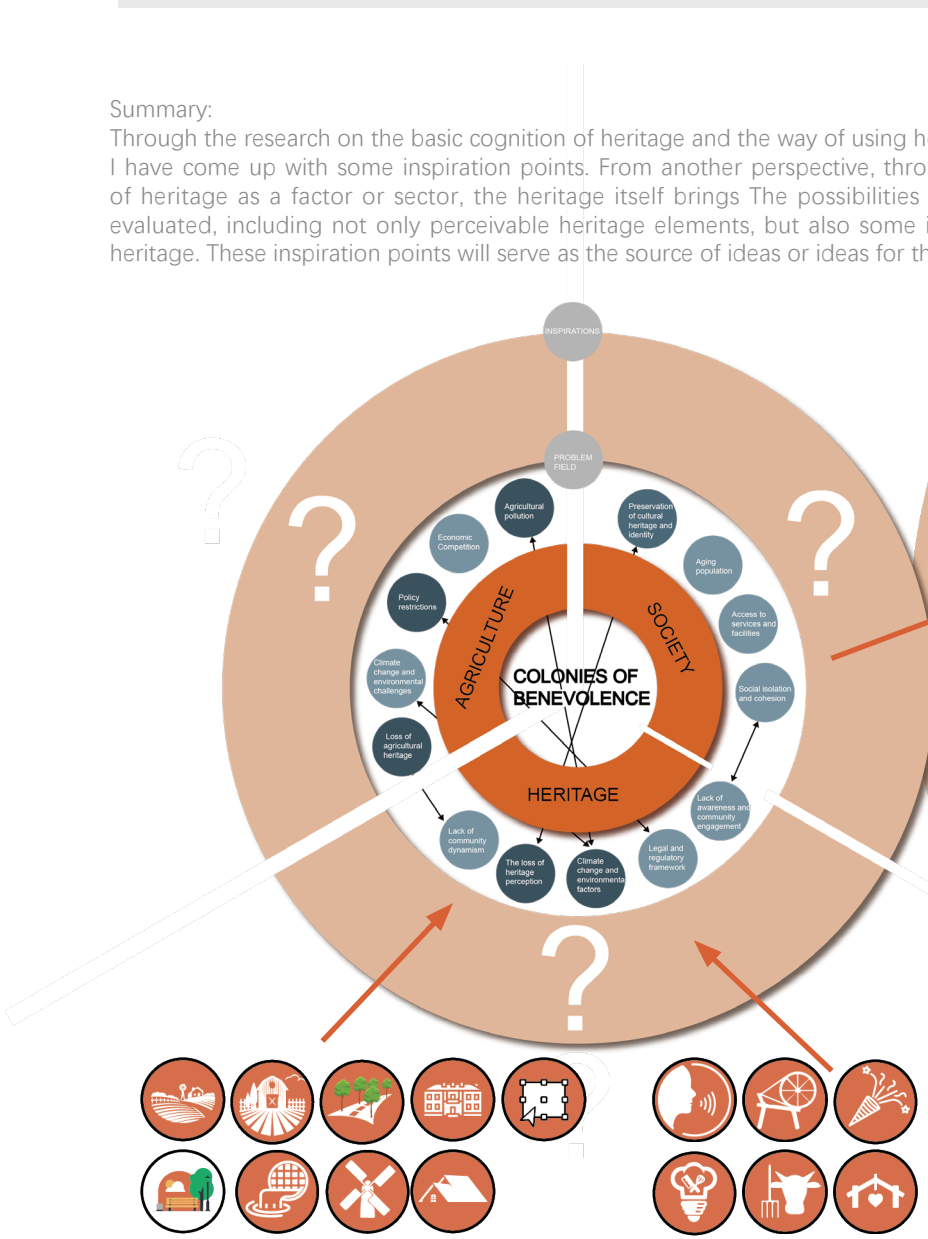


Figure3.67 Placement of the results of the assessment into the design framework by author

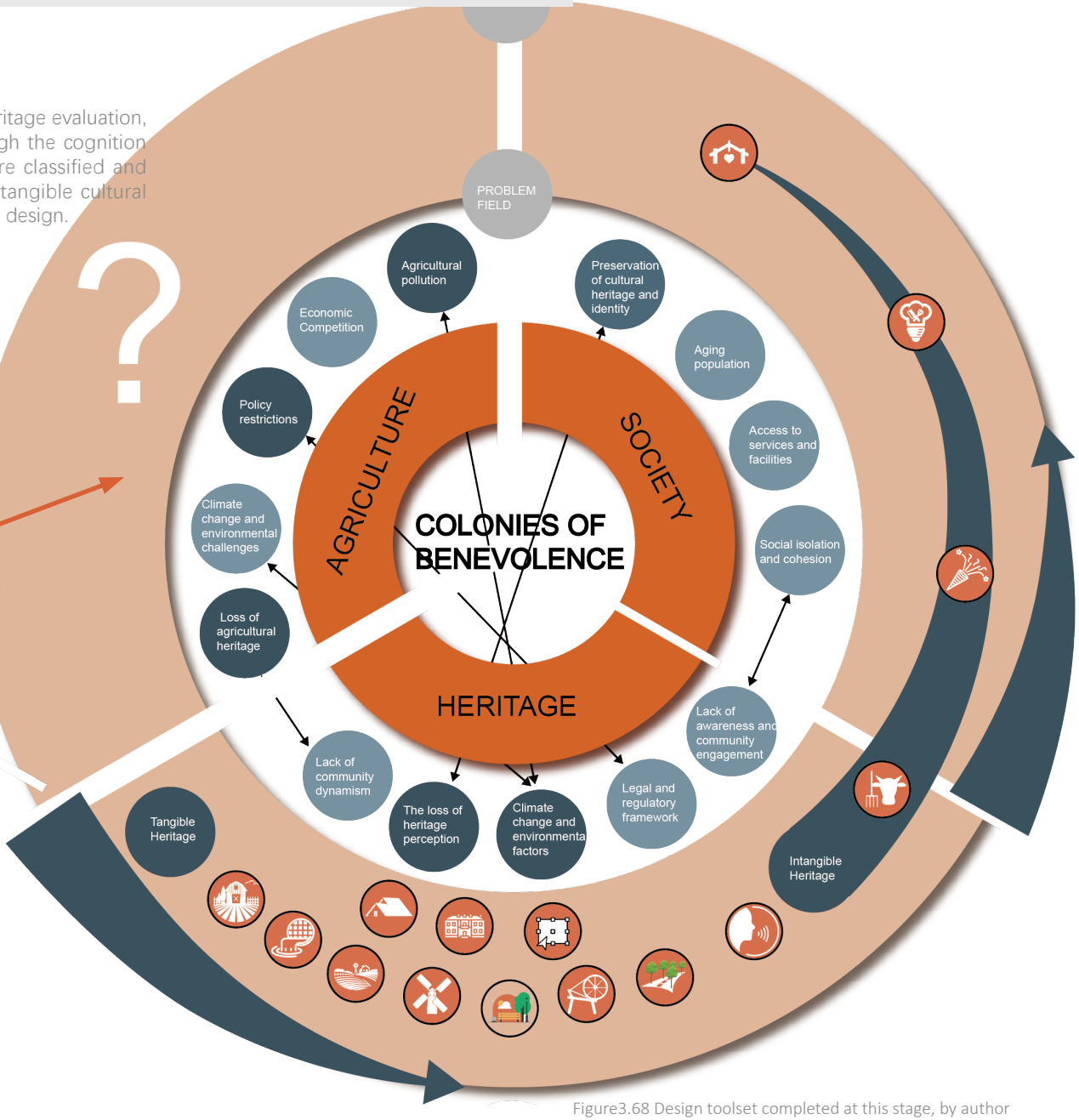


Figure3.68 Design toolset completed at this stage, by author

In this chapter, my analysis of agricultural conditions at different scales led to the identification of dairy farms as the main pillar of the colony, while the four ecological pillars summarised according to the theory of resilient control provided me with a large number of toolboxes. In another perspective, the collective social nature of colonial agriculture also provided me with very valuable reflections that will serve as an important basis and source of inspiration for linking the colonial dairy industry to the agricultural landscape and surrounding communities.

Agriculture

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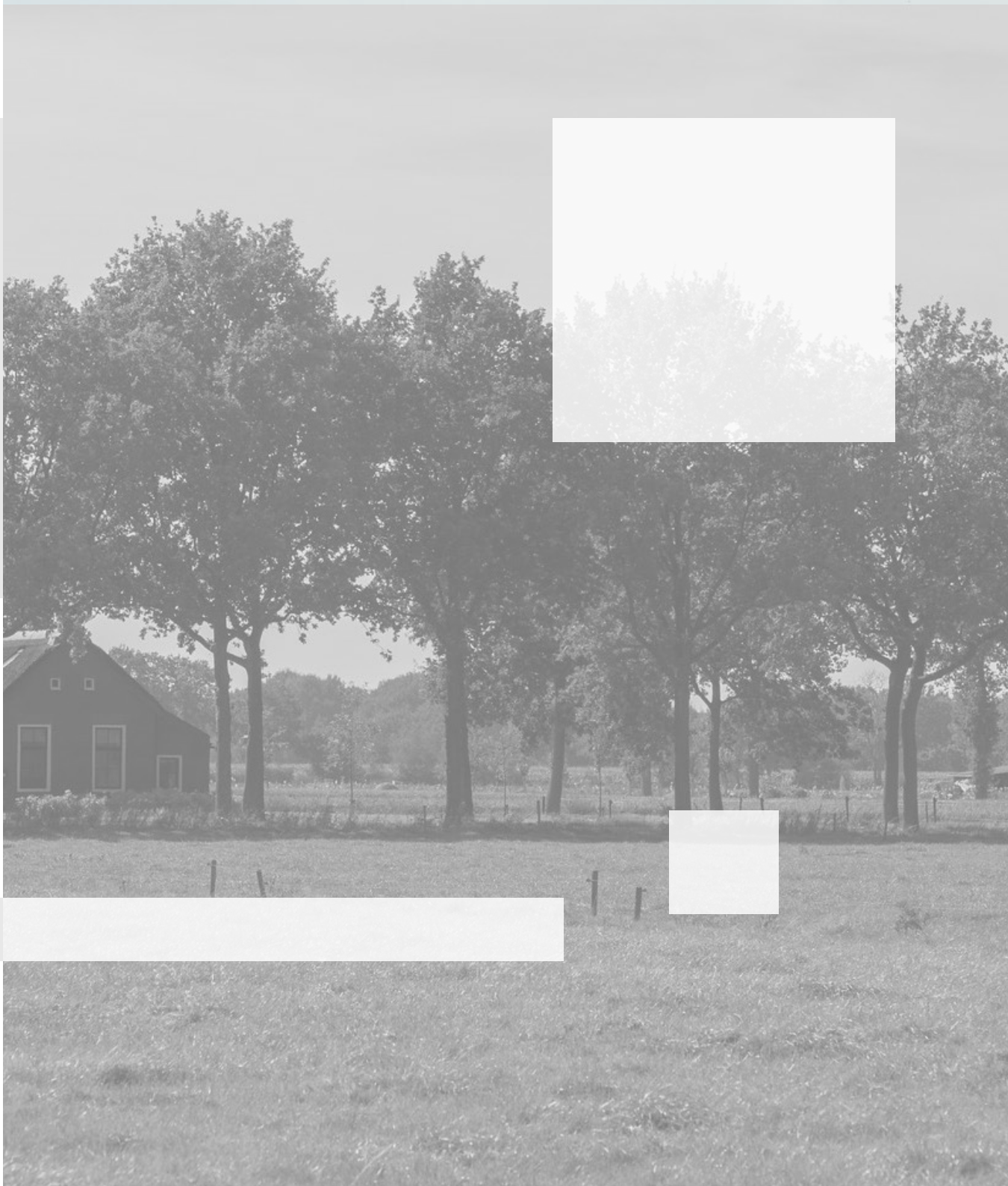


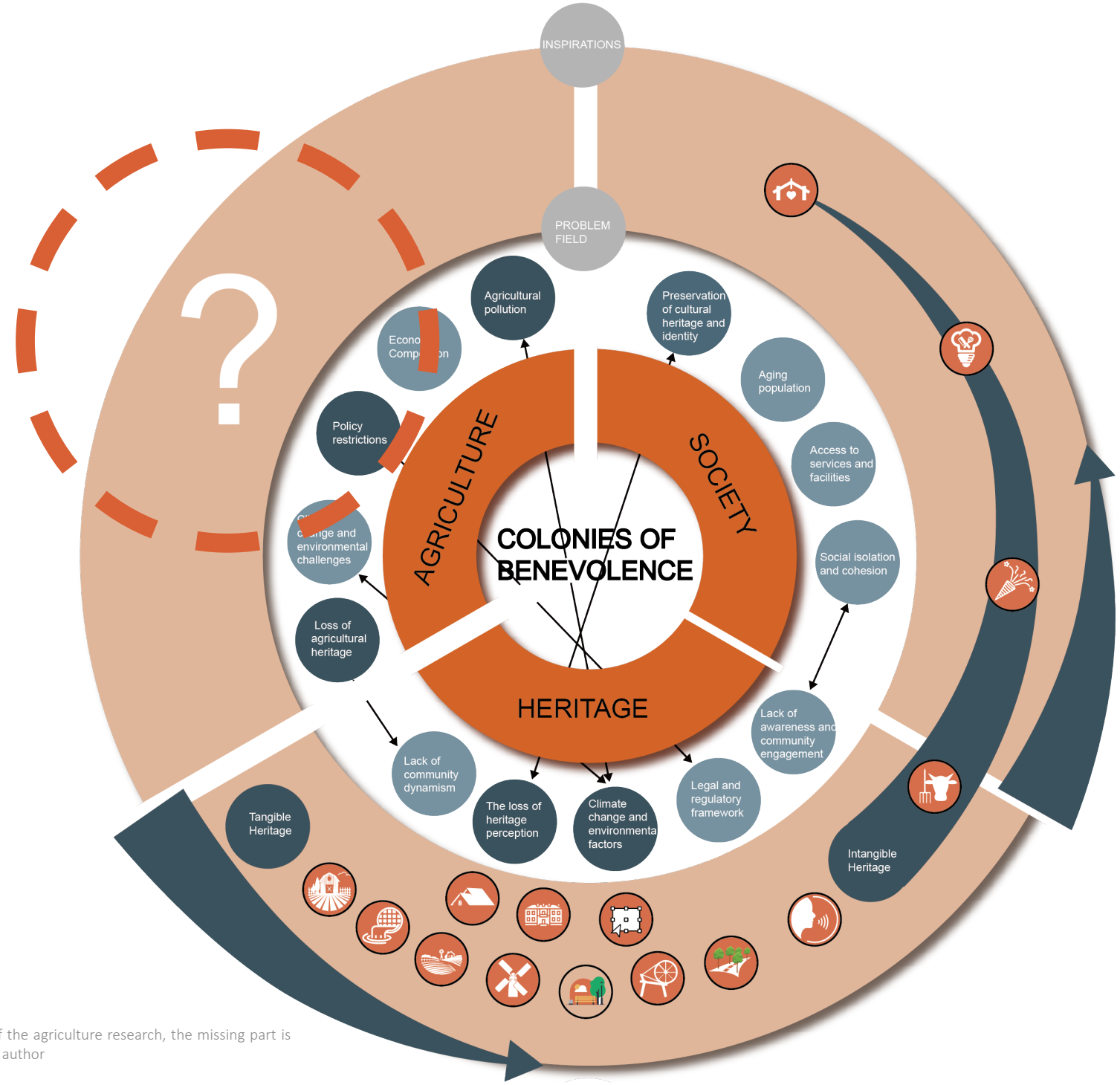


Figure4.1 The diagram shows the missing part of the agriculture research, the missing part is the final result I want to get from this chapter., by author

4.1 Understanding the agriculture

4.1.1 General introduction on national and provincial scale

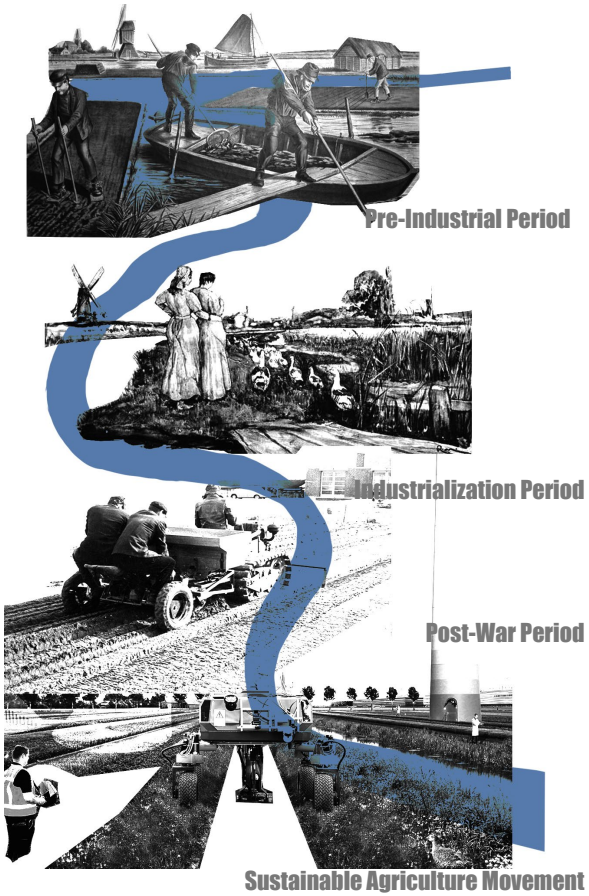


Figure4.2 The different stages of Dutch agricultural development, from:https://www.flickr.com/photos/kolonienvanweldadigheid/, and T.W. van Urk

Pre-Industrial Period (before 1800): Dutch agriculture during this period was characterized by small-scale farming, with a focus on subsistence agriculture and livestock production. The introduction of new crops such as potatoes and maize in the 16th and 17th centuries led to an increase in agricultural productivity and specialization.

Industrialization Period (1800-1945): The Industrial Revolution led to significant changes in Dutch agriculture, including the development of new technologies such as mechanization and chemical fertilizers. This period also saw the growth of the dairy industry and the development of large-scale commercial farming.

Post-War Period (1945-1980s): After World War II, Dutch agriculture underwent significant modernization and intensification, with a focus on increasing agricultural productivity and efficiency. This period also saw the growth of agribusiness and the consolidation of small-scale farms into larger commercial enterprises.

Sustainable Agriculture Movement (1980s-present): In recent decades, there has been a growing interest in sustainable agriculture and the development of more environmentally and socially responsible farming practices. This has led to the growth of organic and biodynamic farming, as well as the promotion of local food systems and community-supported agriculture.

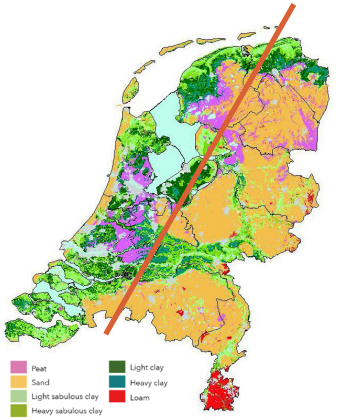


Figure4.3 soil type of the Netherlands, by author

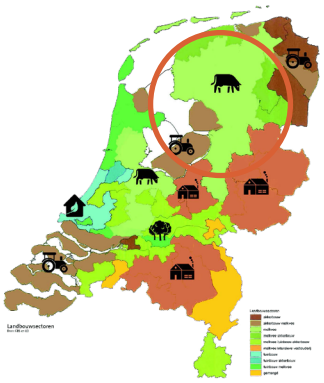


Figure4.4 Agriculture industry division of the Netherlands, by author

The soils of the Eastern Netherlands, including the province of Drenthe, are highly variable and diverse. The region is characterized by a range of soil types, including sandy soils, loamy soils, and peat soils, each with their own unique properties and characteristics.(Figure4.3)

Dairy farming is also common in the North of the Netherlands, particularly in areas where there is a lot of grassland available for grazing. Many beef farms in the region use rotational grazing techniques to improve soil health and maintain healthy pastures for their animals.(Figure4.4)

1.UNDERGROUND WATER

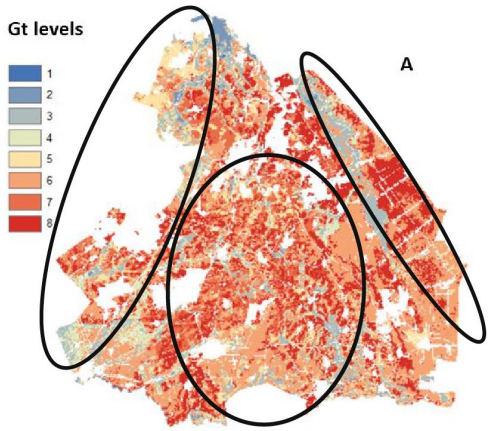


Figure4.5 Underground water level in the Drenthe, by author

As in many other parts of the Netherlands, groundwater is an important resource for agriculture in the province of Drenthe. The sandy soils in the eastern part of the province, which have a low water storage capacity and are vulnerable to drought, are particularly dependent on groundwater for irrigation.

2.SOIL TYPES

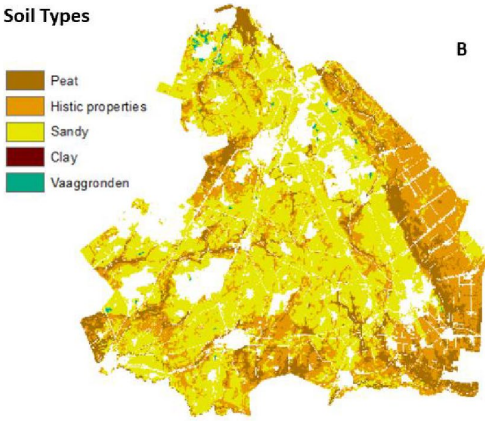
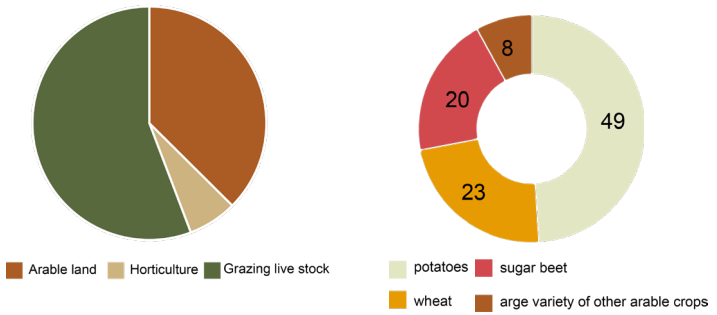


Figure4.6 Soil type in the Drenthe, by author

Soil conditions in the Drenthe Province vary considerably, with sandy soils in the east and clay soils in the west. The sandy soils in the eastern part of the Drenthe Province are challenging for agriculture due to their low nutrient retention capacity and susceptibility to erosion. However, these soils are well suited for growing potatoes and other crops that grow well in well-drained sandy soils. Clay soils in the western part of the province are more fertile but prone to waterlogging and sloughing.

3.LAND USE



	Grass	Silage maize	Potatoes	Summer Barley	Sugar Beets
Typical livestock farm	80	10	10	0	0
Typical arable farm	0	10	50	25	15

Figure4.7 Share of agricultural activities and share of arable land, by author

Livestock farming is an important part of land use in Drenthe, particularly dairy farming. In recent years, there has been a shift towards larger, more intensive dairy operations in the region, as well as a growing interest in sustainable livestock farming practices.

4.1.2 General debates

Economic problems

“It’s a simple calculation, according to De Groot. “70 percent of Dutch nitrogen emissions come from agriculture, a large part of which comes from intensive livestock farming. That is huge. At the same time, the contribution of intensive livestock farming to our own economy is not even 1 percent. The ratio is completely missing.”” (NL Times, 2019)

Housing shortage

Because farmers, especially in-tensive livestock farmers, use up around 70% of the nitrogen bud-get, there is not enough room left in the budget to build a sufficient amount of new houses. This leads to an ever increasing housing shortage (Teije, 2019).

Inefficient food production

Meat is an inefficient way of receiving nu-trients, as the animal needs to eat much more calories than it will produce in terms of meat. Especially for cultivating beef a lot of resources are needed. Furthermore, during the production of meat much more CO2 is produced than with the production of other non-meat high protein products (Ritchie, 2020).

Human health

Intensive livestock farming pollutes the air, which has negative consequences for human health. The government regulates the amounts of pol-lutants farmers are allowed to produce, yet the allowed amount to a lesser extent still is harmful (Kenniscentrum InfoMil, n.d.)

Biodiversity loss

Due to eutrophication of the surface water, a small amount of species will do very well, taking over almost all other species. This leads to a loss of biodiversity (Netherlands environmental as-sessment agency, 2014) Furthermore an abun-dance of nitrogen in the ground leads to new species settling in naturally nutrition poor areas, and thereby taking over the native species (Wet-zels, 2021).

Animal welfare

Regulations are in place to ensure an absolute minimum level of animal rights, when it comes to intensive livestock farming. While these standards are already widely being questioned, the meat industry manages to often not even comply with the regulations, resulting in serious problems related to animal welfare (Bouma, 2014).

Figure4.8 Pictures showing the current dilemmas and challenges facing agricultural activities, by author

4.1.3 Futural agriculture

Sustainable Agriculture

What is sustainable agriculture

Sustainability rests on the principle that we must meet the needs of the present without compromising the ability of future generations to meet their own needs.

Why it should be sustainable ?

Not only does sustainable agriculture address many environmental and social concerns, but it offers innovative and economically viable opportunities for growers, laborers, consumers, policymakers and many others in the entire food system.

Advantages

Bundling green & water
- Use water as the "carrier" of green connections
- Combine to create a higher ecological value

Prevent fragmentation
- Connect green areas with corridors
- Create one continuous network of green islands and corridors
- Connect on the different scales

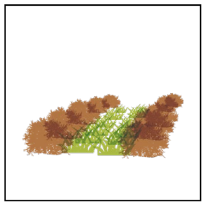
Multifunctional green
- Make the green available for recreational purposes (walking, cycling, sporting, etc.)

Connect urban with regional green structure
- Create one network that connects the entire region
- Connect urban areas with buffer zones and corridors

Types of green connected to necessary habitat for desired species
- Do research on specific species that live in the area
- Connect their needs to the green that will be implemented

Mixing coherence with variety
- Have specific areas within the network that attract people
- Have enough variety for each area to feel (slightly) different, while still maintaining one network

4.1.4 General agriculture toolbox

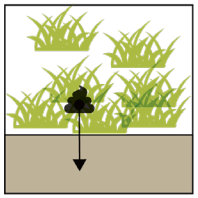


Polyculture - Intercropping

Polyculture and intercropping are agricultural practices that involve growing multiple crops in the same field. In polyculture, a variety of crops are grown together in a field, while in intercropping, two or more crops are grown in the same field in a specific pattern.

Refuge areas

Refuge areas, also known as refugia, are specific areas or habitats where plant or animal species can survive during times of environmental stress or disturbance, such as drought, fire, or disease outbreaks.



Green manure

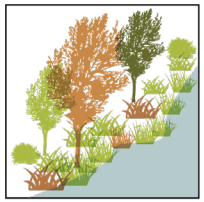
Green manure refers to the practice of growing plants that are specifically used to improve the fertility and health of soil. These plants are typically grown for a certain period of time, and then either tilled back into the soil or left to decompose on the surface

Insectary strips & beetle banks

Insectary strips and beetle banks are two related agricultural practices that involve planting strips or areas of specific plant species to provide habitat and food for beneficial insects, particularly predatory and parasitic insects that can help control pest populations in crop fields.

Paludiculture

Paludiculture is a term that refers to the cultivation of crops and other plants in wetlands or peatlands. This agricultural practice seeks to take advantage of the unique conditions found in wetland ecosystems, such as high levels of water and nutrient availability, to produce crops and other plant-based products in a sustainable and environmentally friendly way.



Water buffer strip

Buffer strips can trap sediment and enhance nutrient and pesticide filtration by slowing surface runoff that may enter local surface waters.

Alley cropping

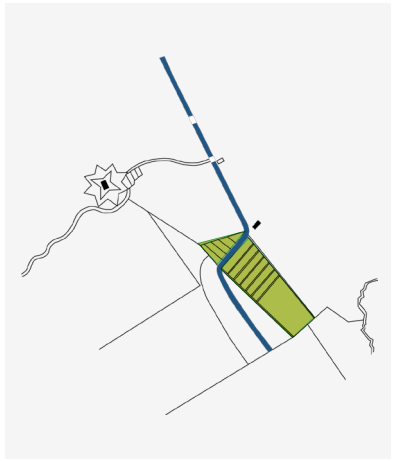
Alley cropping systems are particularly attractive to producers interested in growing multiple crops on the same land to increase yields across the farm. Growing multiple crops in close proximity to each other can provide significant benefits to producers, such as increased crop yields and microclimatic benefits, as well as helping them to manage risk.

Food forest

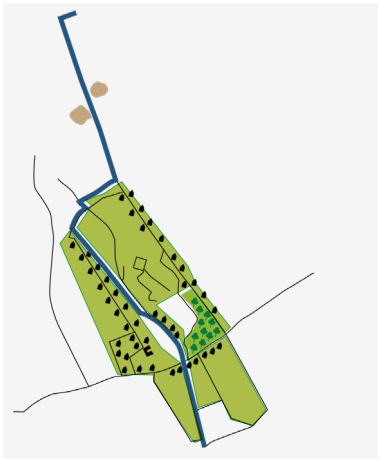
Food forestry is a form of forest-based agriculture. Forests are home to the trees, shrubs and plants that produce food. Depending on the season, food forests produce crops all year round. But that's not all: food forests contribute to a better climate, increased biodiversity and healthy living conditions for humans and animals.

4.1.5 Local Dynamics

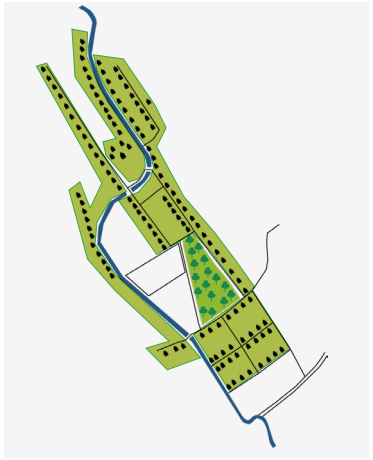
The agricultural development of the colony expanded outwards over time and as times progressed, and its pattern of renewal was in keeping with the pattern and rate of spatial development of the colony itself



1818 onwards



mid-19th century



mid-19th century to early 20th century

20th century

Figure4.9:The time frame of development of Colonies of Benevolence. It shows not only the construction but also the social life of local people, by author

4.1.6 Local crops

Frederiksoord and Wilhelminaoord are primarily used for animal feed, particularly for dairy cows. Some of the most common crops used for animal feed include:

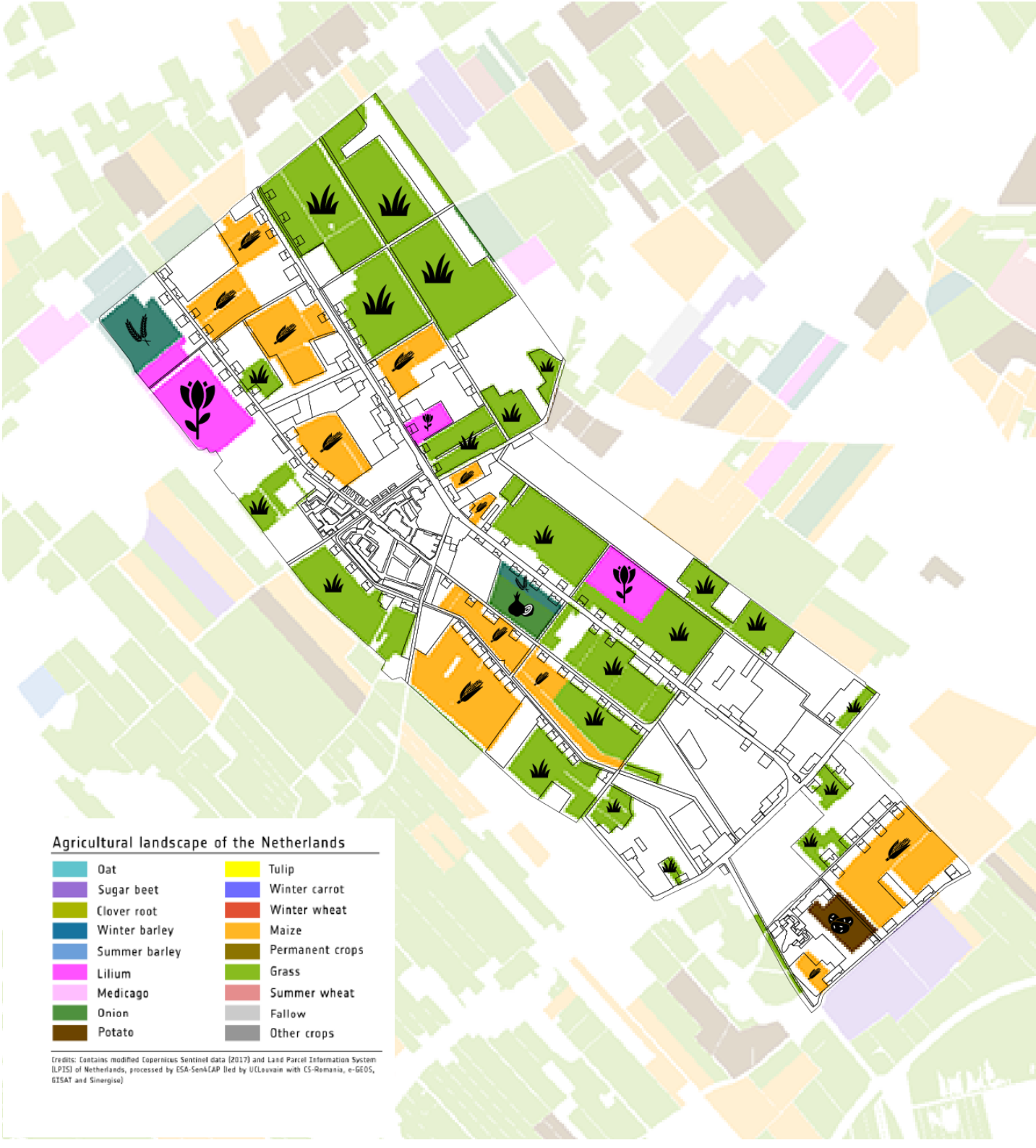
Grasses: Various grasses are grown in the area, such as ryegrass, timothy grass, and meadow fescue. These are used to produce hay and silage for winter feed.

Maize: Maize is also an important crop for animal feed, particularly for dairy cows. It is usually harvested as silage, and provides a high-energy feed for cows.

Clover and alfalfa: Clover and alfalfa are legumes that are commonly grown for animal feed, as they are high in protein and can fix nitrogen in the soil.

Beet pulp: Beet pulp is a byproduct of sugar beet processing, and is often used as a supplementary feed for dairy cows.

Overall, the crops grown at the colonial sites of Frederiksoord and Wilhelminaoord are primarily used to support the dairy farming industry in the area, which has been an important part of the region's economy and cultural heritage for many years.



4.2 Gerneral toolbox

From the previous analysis it can be concluded that the main local agricultural activities in the colony basically revolve around the local dairy industry, so dairy farms are used as the next stage of the study

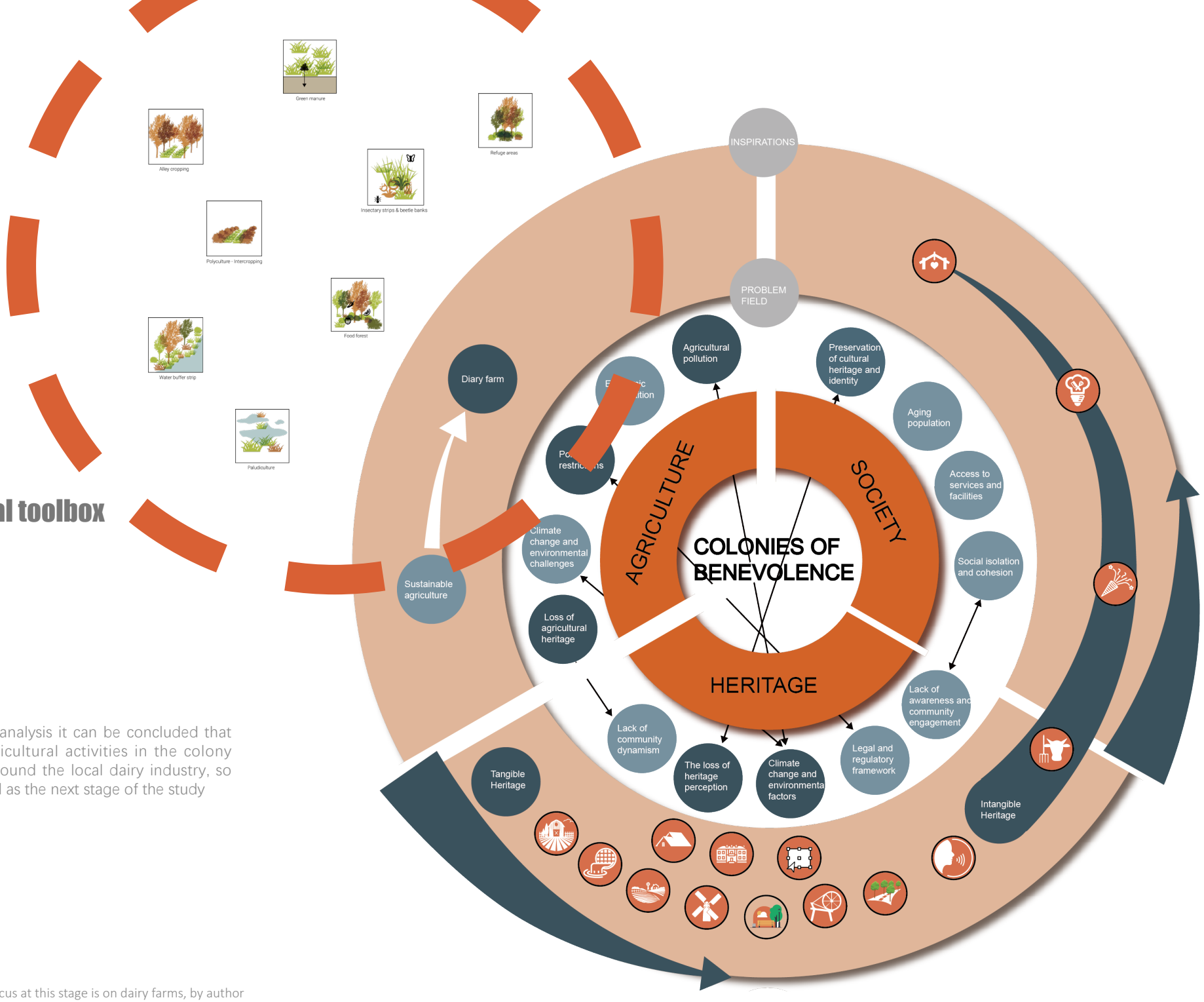


Figure4.10 The diagram shows The focus at this stage is on dairy farms, by author

4.2.1 Connections to the Colonies of Benevolence

Figure4.11 The images show how dairy farms can be used as a heritage element to carry the colonial heritage and colonial society as well as colonial agriculture, by author.

As a bearer of the heritage, the dairy farm in Frederiksoord and Wilhelminaoord combines agricultural activities with the cultural attributes of the colonial heritage. The dairy farm, which is a key component of the agricultural landscape of the region, is not only an important economic activity but also a symbol of the history and traditions of the area.

The dairy farm represents a continuation of the agricultural practices that were established by the first settlers of the colonies in the 19th century. These practices were based on the efficient use of resources, the integration of crops and livestock, and the maintenance of the natural environment. Today, the dairy farm continues to employ these same principles, combining modern technology with traditional agricultural practices to produce high-quality dairy products while preserving the cultural and environmental heritage of the region.

In addition to its economic and cultural significance, the dairy farm also plays an important role in the social fabric of the community. It provides employment opportunities, supports local businesses and industries, and contributes to the sense of identity and pride among the people of the region.

As a bearer of the heritage, the dairy farm represents an important link between the past, present, and future of the colonies. By preserving and promoting the cultural and environmental heritage of the region, the dairy farm ensures that future generations will be able to appreciate and benefit from the rich history and traditions of Frederiksoord and Wilhelminaoord.

4.2.2 Dairy Farm Challenges

Dairy farming has significant environmental implications, including greenhouse gas emissions, water pollution, and land degradation. To minimize these impacts, the industry must transition towards more sustainable practices, such as improved waste management, resource-efficient production methods, and the adoption of agroecological principles. Balancing environmental concerns with heritage conservation can be complex, as it requires careful planning and consideration of the historical context.

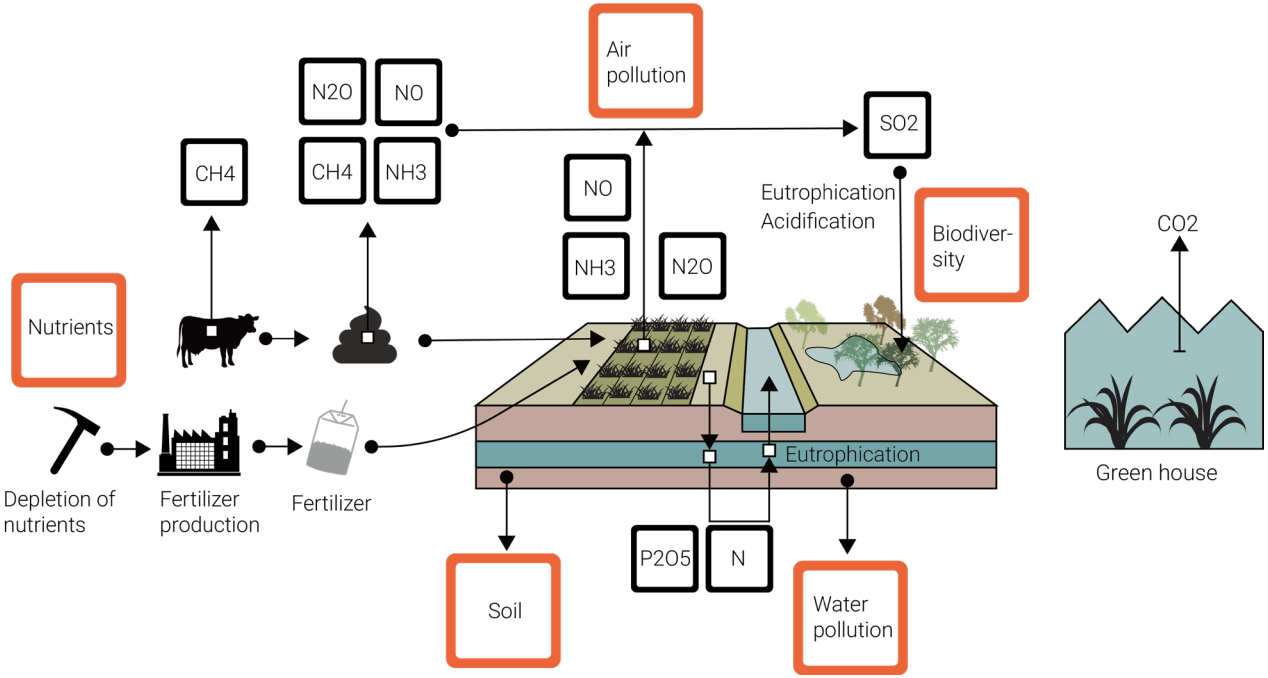


Figure4.12 The images show the pollution caused by dairy farms, by author.

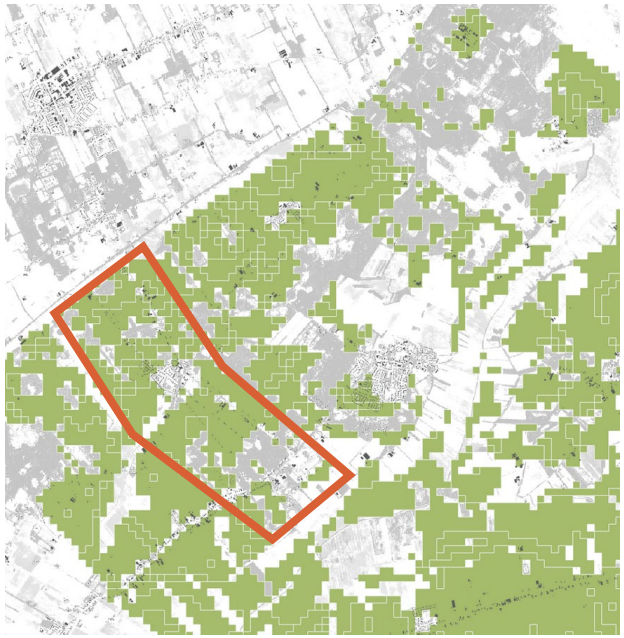


Figure4.13 :Percentage of nitrate exceedence,by author

4.2.3 Dairy Farm Debates and reflection

In the current Dutch dairy farming policy and market, there are several debates of interest that highlight different perspectives and opinions. These debates often revolve around sustainability, animal welfare, environmental impact, market demands, and the future direction of the dairy industry. While opinions may vary, one perspective suggests that rather than simply reducing the scale of dairy farming, it is more important to focus on improving the industry in new ways and means. Here are some key debates and arguments in this regard:

Sustainable Intensification: One debate centers around the concept of sustainable intensification, which argues that increasing the efficiency and productivity of dairy farming can be compatible with sustainability goals. Proponents suggest that technological advancements, improved breeding and feeding practices, and better resource management can help reduce environmental impact while meeting growing demand for dairy products.

Transition to Agroecology: Another debate involves transitioning from conventional dairy farming to more agroecological approaches. Advocates argue that agroecology, which emphasizes ecological principles and practices, can enhance sustainability, biodiversity, and soil health. They argue for shifting towards pasture-based systems, diversified farming, and reduced dependence on external inputs.

Animal Welfare: The debate on animal welfare is a significant concern in the dairy industry. Critics argue that large-scale, intensive farming practices may compromise animal welfare, leading to concerns about confinement, health issues, and the separation of calves from their mothers. Advocates emphasize the importance of providing cows with more space, access to pasture, and improved living conditions.

Market Demand and Product Diversification: Consumer preferences and market demands are evolving, with an increased interest in plant-based alternatives and sustainable, ethically produced dairy products. Some argue that the dairy industry should respond by diversifying its product offerings, exploring opportunities in plant-based dairy alternatives, organic dairy, or specialty products, to meet changing consumer preferences and capture new markets.

Circular Economy and Waste Reduction: There is growing recognition of the need to move towards a circular economy, reducing waste and optimizing resource use. The debate centers around finding innovative ways to utilize dairy by-products, such as whey or manure, to minimize waste and maximize resource efficiency. This includes exploring technologies for bioenergy production or developing sustainable nutrient management systems.

In response to these debates, the perspective suggests that instead of solely reducing the scale of dairy farming, it is crucial to invest in innovation, research, and policy measures that improve sustainability, animal welfare, and environmental outcomes. This may involve incentivizing best practices, supporting technological advancements, promoting agroecological approaches, and encouraging market diversification. The goal is to find a balance between economic viability, environmental stewardship, and meeting consumer demands, ultimately shaping the future of the dairy industry in new and improved ways.

4.3 Futural Dairy Farming

To ensure a sustainable dairy industry in the future, several interconnected topics and needs must be addressed. Reducing greenhouse gas emissions is crucial, achieved through improved manure management and energy efficiency. Water quality management, including responsible nutrient management, safeguards water sources. Animal welfare promotes both productivity and sustainability, focusing on comfortable housing and access to pasture. Embracing circular food production minimizes waste and optimizes resource utilization, benefiting the farm's self-sufficiency. Farm viability and income diversification ensure economic sustainability. Maintaining soil health through practices like cover cropping and organic matter management supports long-term productivity. Biodiversity conservation, achieved through habitat preservation and agroecological practices, promotes ecosystem resilience. Adopting emerging technologies enhances efficiency and precision in resource management. Sustainable feed production reduces the ecological footprint. Promoting transparency and addressing consumer concerns build trust. By addressing these interconnected topics, the dairy industry can achieve a holistic and sustainable future.

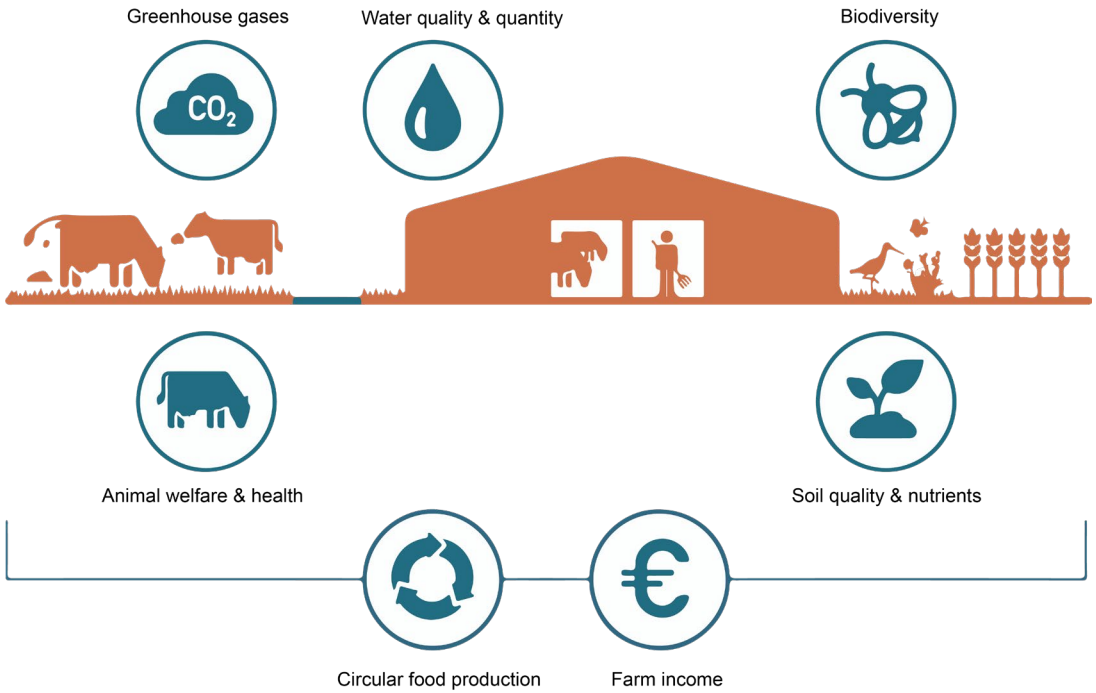


Figure4.14 :The diagram shows what the dairy industry needs to focus on in the future,by author

4.3.1 Control Model and Resilience Model

CONTROL MODEL

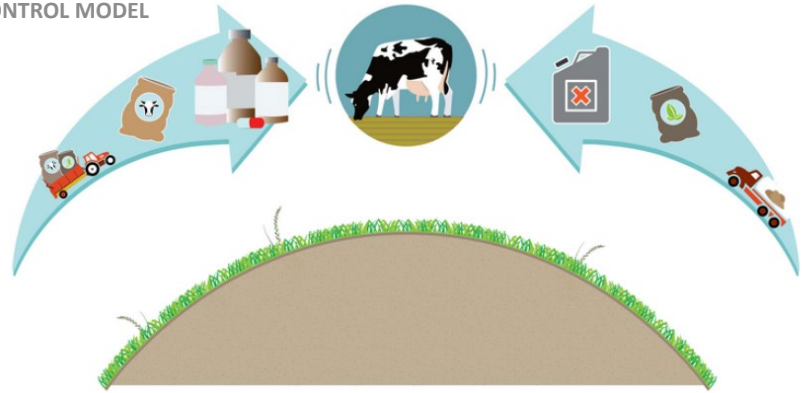


Figure4.15 Production enhancement through the use of external inputs such as fertilizers, irrigation, antibiotics and pesticides

RESILIENT MODEL

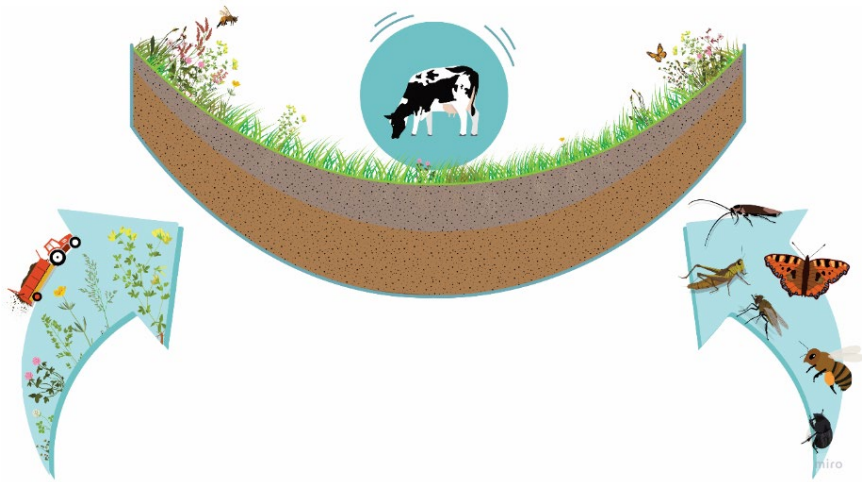


Figure4.16 Biodiversity and natural processes form the basis for increased resilience and risk reduction

SOURCE: https://www.felixx.nl/projects/biodiversity-based-dairy-farming&lang=nl

In the context of dairy farming, there are two key models that are often discussed: the Control Model and the Resilience Model. These models represent different approaches to managing and adapting to challenges in the industry. Here's an overview of each model:

Control Model: The Control Model of dairy farming emphasizes maximizing production through strict control measures and optimization of inputs. It focuses on achieving high levels of efficiency, standardization, and predictability. This model typically involves intensive management practices, such as tightly regulated feeding, housing, and milking routines.
Advantages of the Control Model include increased production, consistency in output, and the ability to achieve economies of scale. It relies heavily on technology, data monitoring, and precision farming techniques to optimize resource utilization and productivity. However, critics argue that the Control Model may prioritize short-term gains over long-term sustainability and may have potential drawbacks related to animal welfare, environmental impact, and resilience in the face of changing conditions.

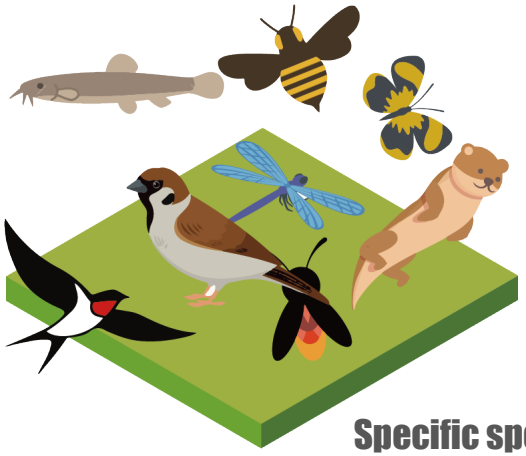
Resilience Model: The Resilience Model of dairy farming emphasizes the ability to adapt and withstand challenges, aiming for a more balanced and sustainable approach. This model focuses on building resilience at various levels: individual farm level, community level, and the broader agricultural system. It recognizes the need to address economic, social, and environmental dimensions in a holistic manner.
The Resilience Model often involves diversified farming systems, including mixed crop-livestock operations, agroforestry, and rotational grazing. It promotes soil health, biodiversity conservation, and resource conservation practices. It also encourages collaboration, knowledge-sharing, and adaptive management strategies to address uncertainties and changing conditions.

Advantages of the Resilience Model include enhanced environmental sustainability, improved animal welfare, and greater adaptability to climate change and market fluctuations. It takes a long-term perspective, aiming for more robust and flexible systems. However, the Resilience Model may require additional management skills, collaborative networks, and the willingness to adapt to changing circumstances.

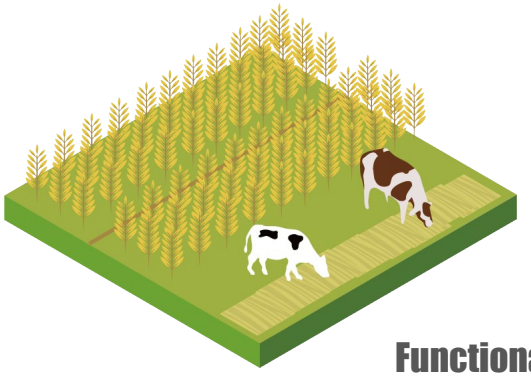
In practice, many dairy farms may adopt a combination of both models, finding a balance between control and resilience. The key is to prioritize sustainability, animal welfare, and long-term viability while optimizing productivity and responding to market demands. Each farm's specific circumstances, resources, and goals will influence the choice and implementation of the control and resilience approaches.

Ultimately, the choice between the Control Model and the Resilience Model depends on the farm's context, values, and aspirations, as well as the ability to integrate sustainable practices and adapt to evolving challenges in the dairy industry.

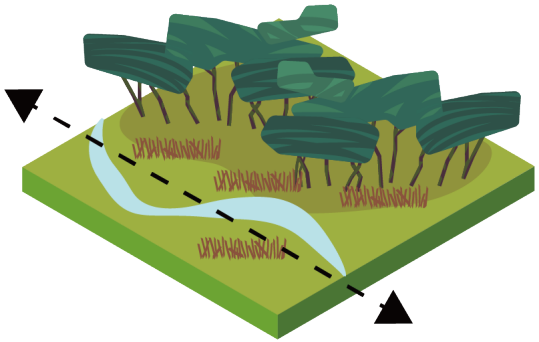
4.3.2 Four base goals



Specific species



Functional agrobiodiversity



Landscape diversity

Source areas & Corridors

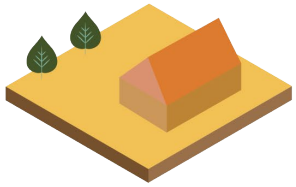
4.3.3 Landscape diversity

Landscape Diversity: Landscape diversity refers to the inclusion of various habitats, land uses, and ecological features within and around the dairy farm. It involves preserving natural areas, creating hedgerows, maintaining wetlands, and integrating diverse crop rotations. By promoting landscape diversity, the resilience model aims to enhance ecological resilience, support biodiversity, and provide a range of ecosystem services, such as pollination and natural pest control.

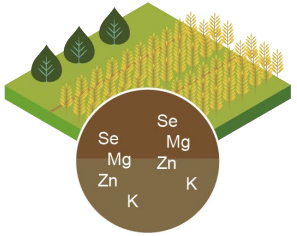
Drinking pool

Trees and shrubs

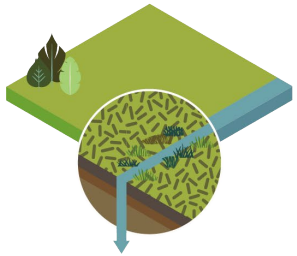
plot edge planting



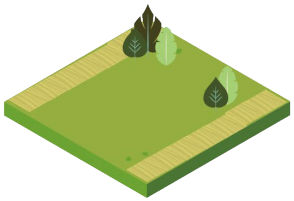
Mix trees and crops



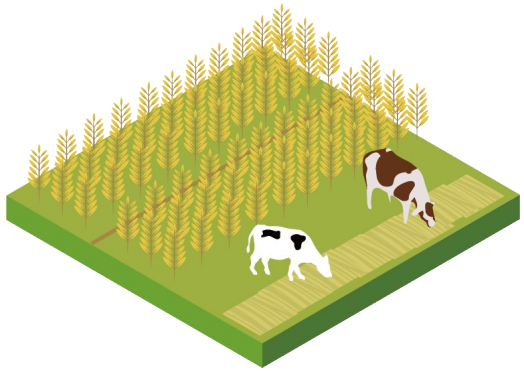
Hedges and ditches



Hedgerows

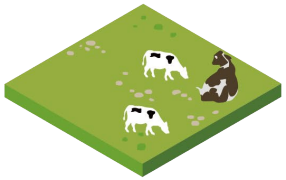


4.3.4 Functional agrobiodiversity

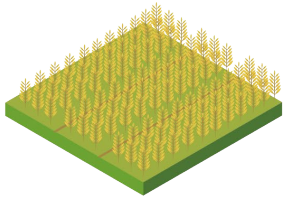


Functional Agrobiodiversity: Functional agrobiodiversity focuses on incorporating diverse plant species and functional groups within the farming system. This includes planting cover crops, intercropping, and maintaining field margins with a variety of plant species. Functional agrobiodiversity enhances soil health, nutrient cycling, pest and disease control, and pollination services. It also contributes to enhanced resilience by providing a buffer against climate variability and improving the overall stability and productivity of the farm system.

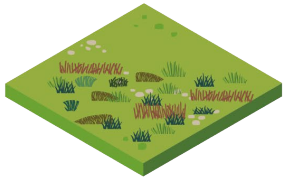
Outdoor grazing



Protein rich crops

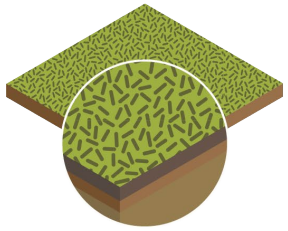


Herb-rich grassland



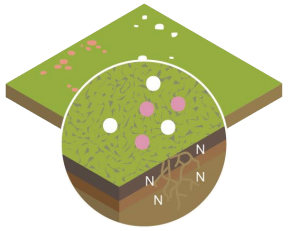
Manure produced by own cattle

Permanent pasture

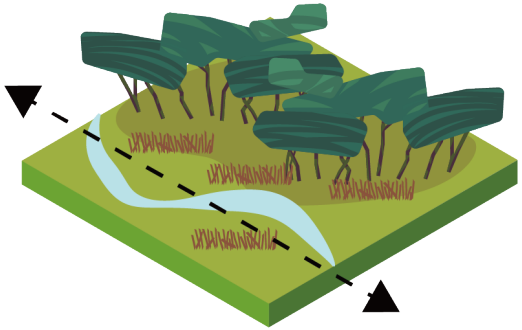


No pesricides

Green manure

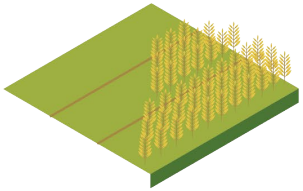


4.3.2 Source areas & Corridors

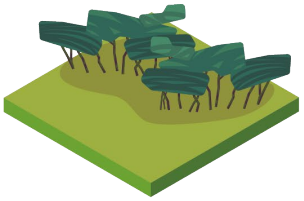


Source Areas and Corridors: Source areas and corridors are essential components of the resilience model. Source areas refer to areas of high biodiversity and genetic resources, including natural habitats or designated conservation areas. Corridors are the connecting pathways that allow for the movement of species and genetic material between different habitats. By preserving source areas and establishing corridors, the resilience model aims to facilitate gene flow, maintain genetic diversity, and enhance ecological connectivity.

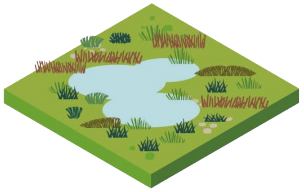
Cropfields



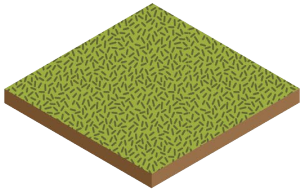
Woodlands



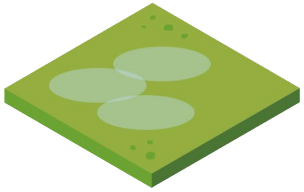
Wet&humid areas



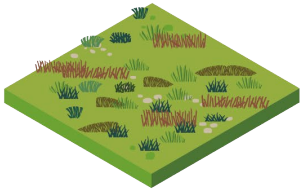
Grasslaands



Lakes and watersides



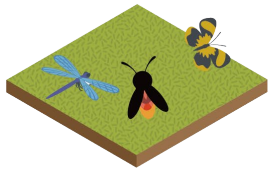
Shelter areas



4.3.2 Specific species

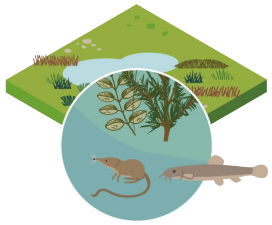
Specific Species: This pillar emphasizes the importance of maintaining a diverse range of specific species within the farming system. It involves selecting and breeding livestock breeds that are well-suited to local conditions and have desirable traits such as disease resistance, adaptability, and efficient resource utilization. By promoting specific species diversity, the resilience model aims to enhance the farm's ability to withstand and adapt to various challenges.

Flowering fields margins

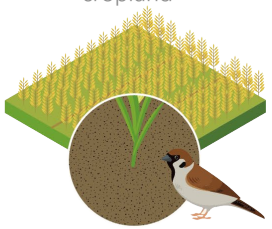


Trees and shrubs

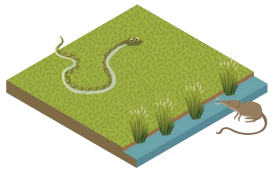
Wetland areas



cropland

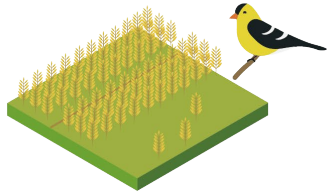


Dikes and reed



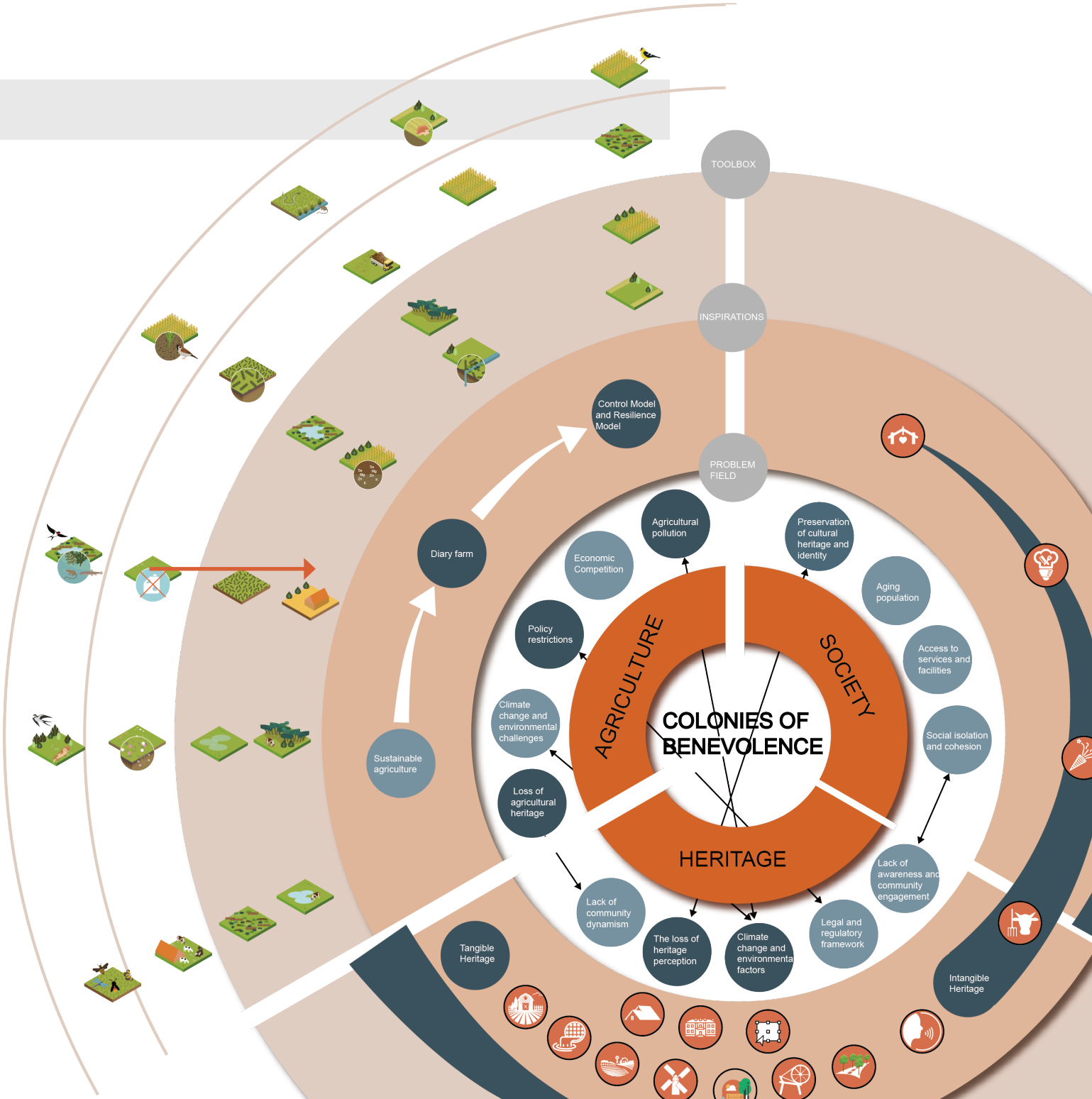
Hedgerows

Moving regime



4.4 Conclusion

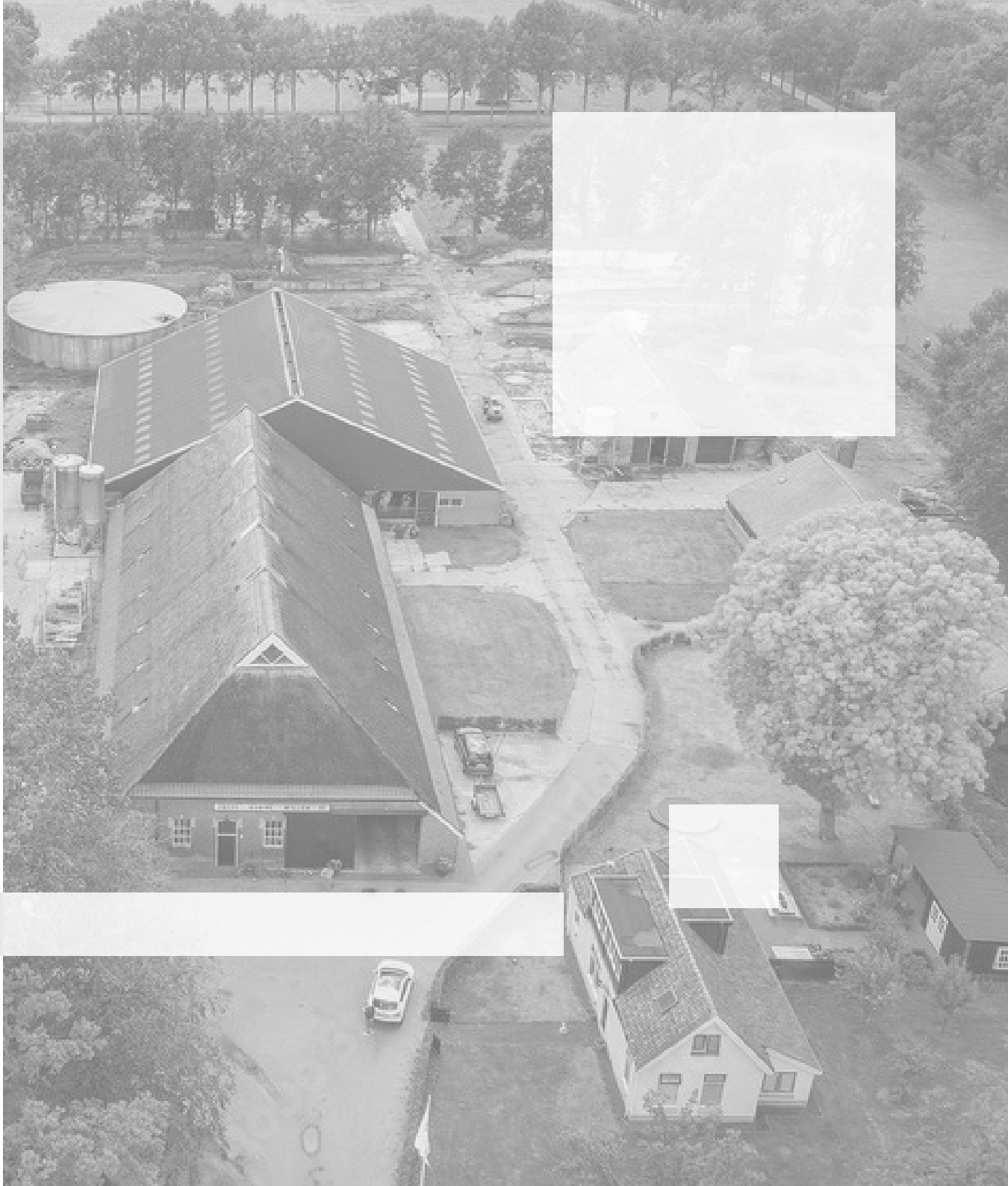
In the previous article, I have elaborated on the issues of heritage and agriculture. At the same time, I have collected and sorted out the design theoretical framework shown in the picture on the right. Under the guidance of this framework, I will further implement the design vision and design strategies



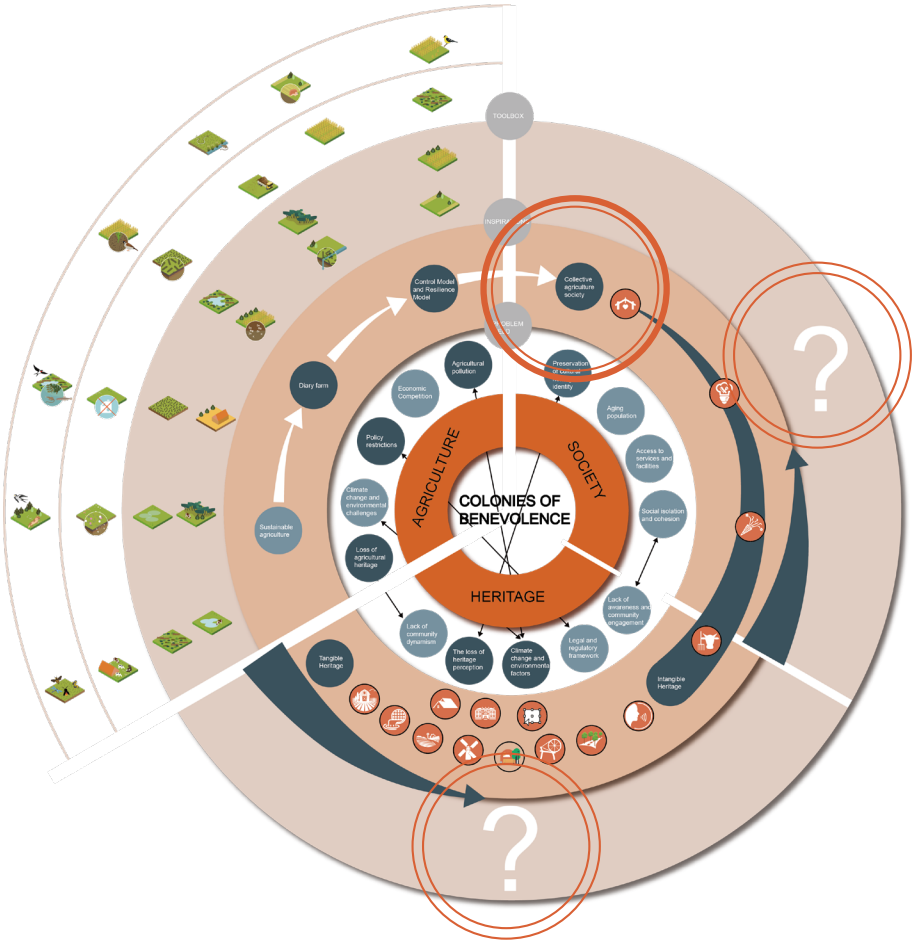
In this section I summarise the previous research findings and present the new concept of a colonial dairy farm, which will be used throughout the design, while responding to the research questions raised in the previous section. In addition to this, how to design, how to control scale and how to use the toolbox will be the main outcomes presented in this chapter.

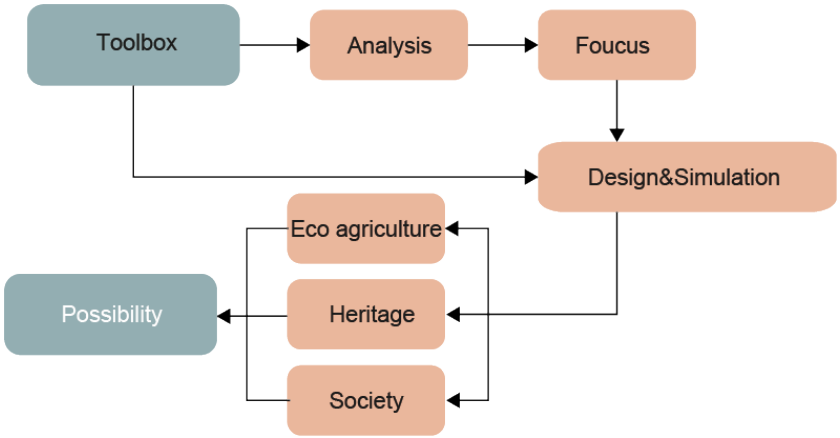
Design

05



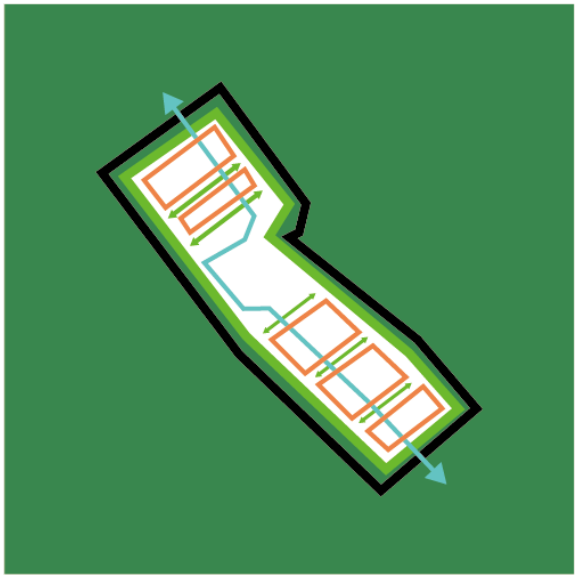
5.1 Design vision



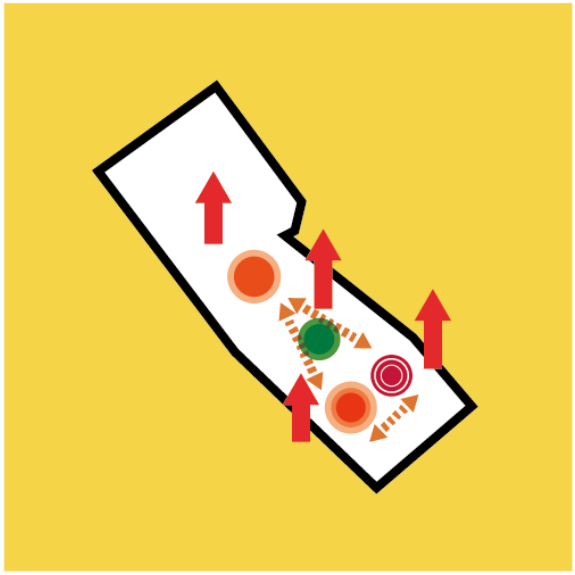


Based on the original analysis, I need to return to the research questions during the design stage. I need to deduce the design from three perspectives: ecological society and heritage. My design should not be a top-down process of answering questions. , but in the process of constantly discovering problems to verify methods and solve problems to obtain answers. So my design will start from three directions and finally form a multi-layered overall design.

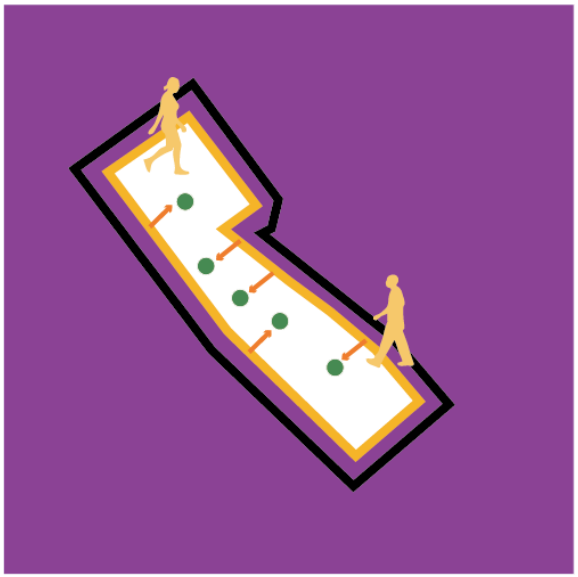
5.2 Design strategy



There will be three methods: Increasing water bodies, increasing forests, and improving soil layers to solve the problem of agricultural pollution and respond to future agricultural development issues. At present, the ecological structure here is dominated by agriculture, which has caused a large amount of eutrophication of soil and water bodies. At the same time, the fragmented green structure also makes it unsuitable for the survival of wild animals. In the future, nearly one-third of the land will be converted from agricultural land to other functions, so how to convert and utilize these spaces will become the main starting point.

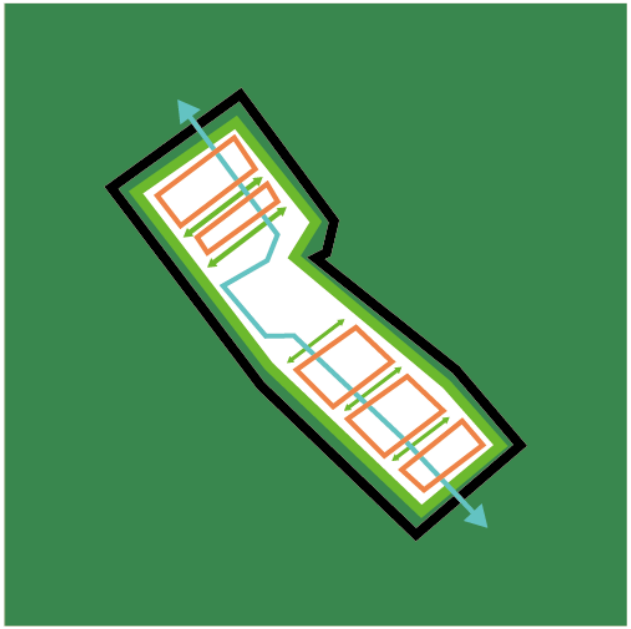


In response to the research question on how to improve the quality of life of local residents, I proposed a new collective social cooperation structure. Two colonial villages will serve as the main core of the collective village. At the same time, they will have their own dairy factory to concentrate the production capacity in the village. At the same time, there will be new community activity space and commercial space inside the village. At the same time, as the core of local tourism, the museum will serve as a tourist service center, centralizing the tour and service functions.



Ultimately, in response to my research and understanding of the heritage, and in order to enrich visitors' experiences while visiting, I proposed a design that added a new trail structure. The trail will intervene in the heritage space with a relatively low profile, but due to the staggered heights of the trail, visitors will have a different way of viewing and experiencing than usual.

5.3 Ecological design vision

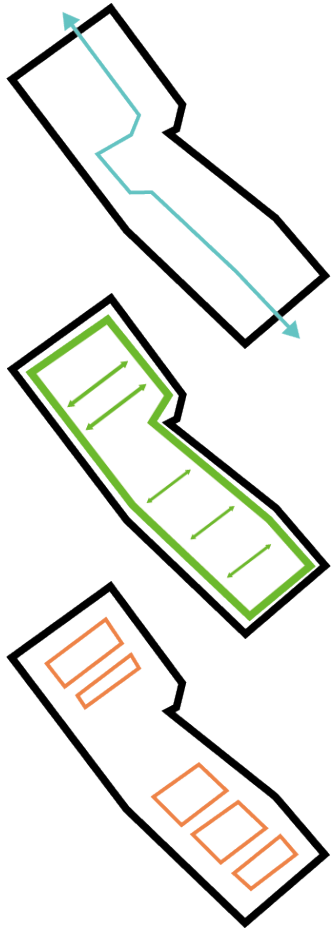


Through the analysis of the toolbox, combined with the landscape elements of the site itself, I have developed the following strategies:

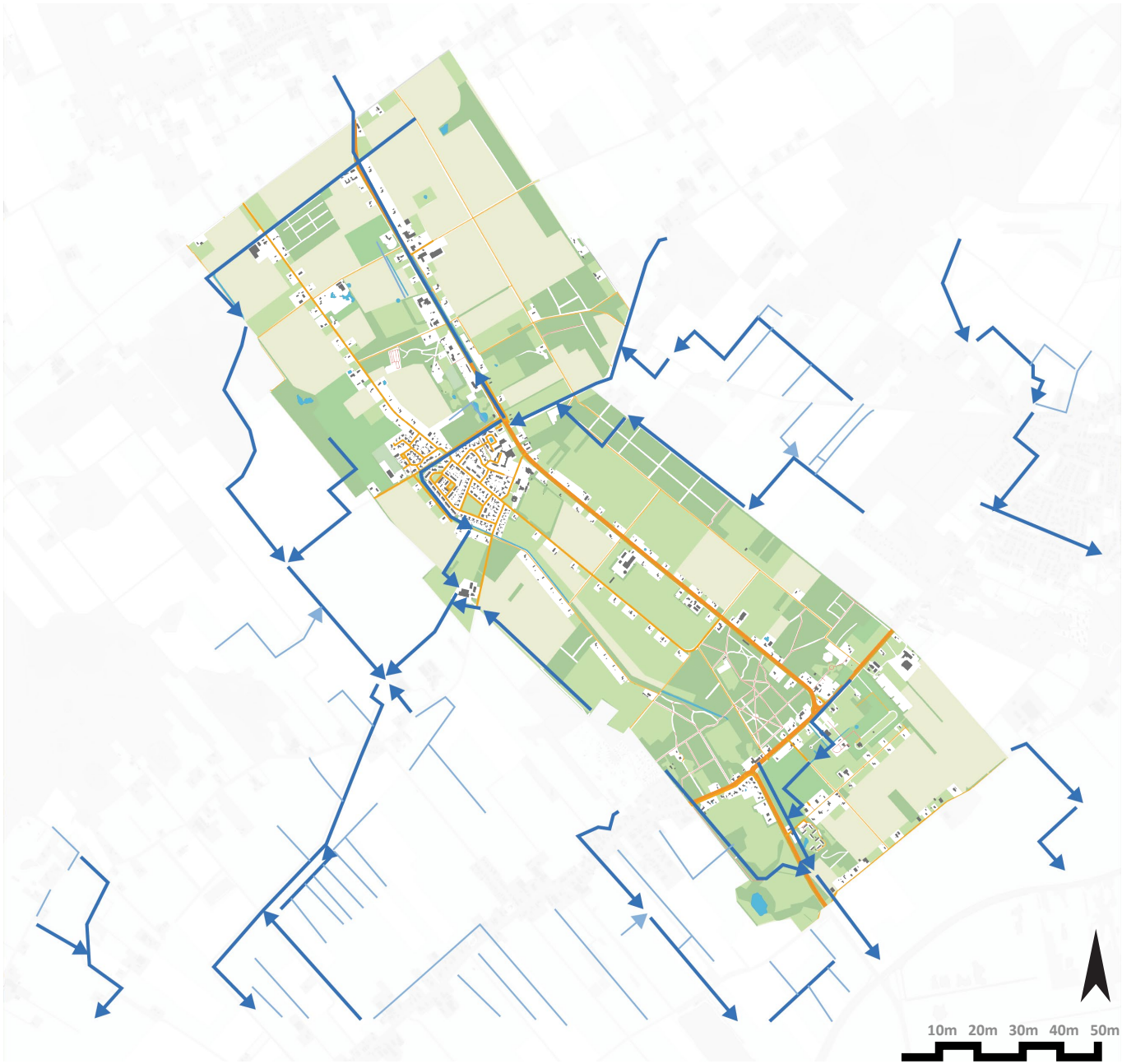
Ecological water system: Key water system elements such as wetlands and meadow were missing from the site, so in conjunction with the need for a drinking pond in the toolbox, a new water system combining ecological and animal friendly functions needed to be designed.

Green boundary: The existing pasture is predominantly grazed, but based on the needs of the toolbox for herbaceous plants and pollinators, the pasture here requires specific plant design for different areas

Herb rich grazing base: The existing pasture is predominantly grazed, but based on the needs of the toolbox for herbaceous plants and pollinators, the pasture here requires specific plant design for different areas



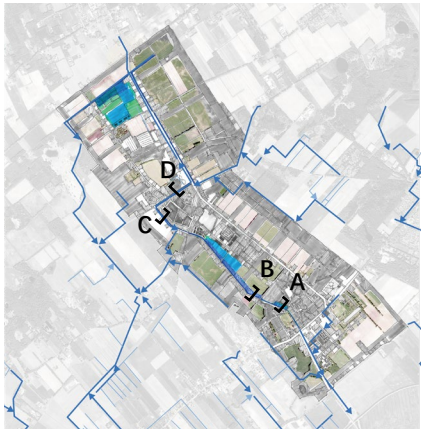
5.3.1.1 Water system renovation

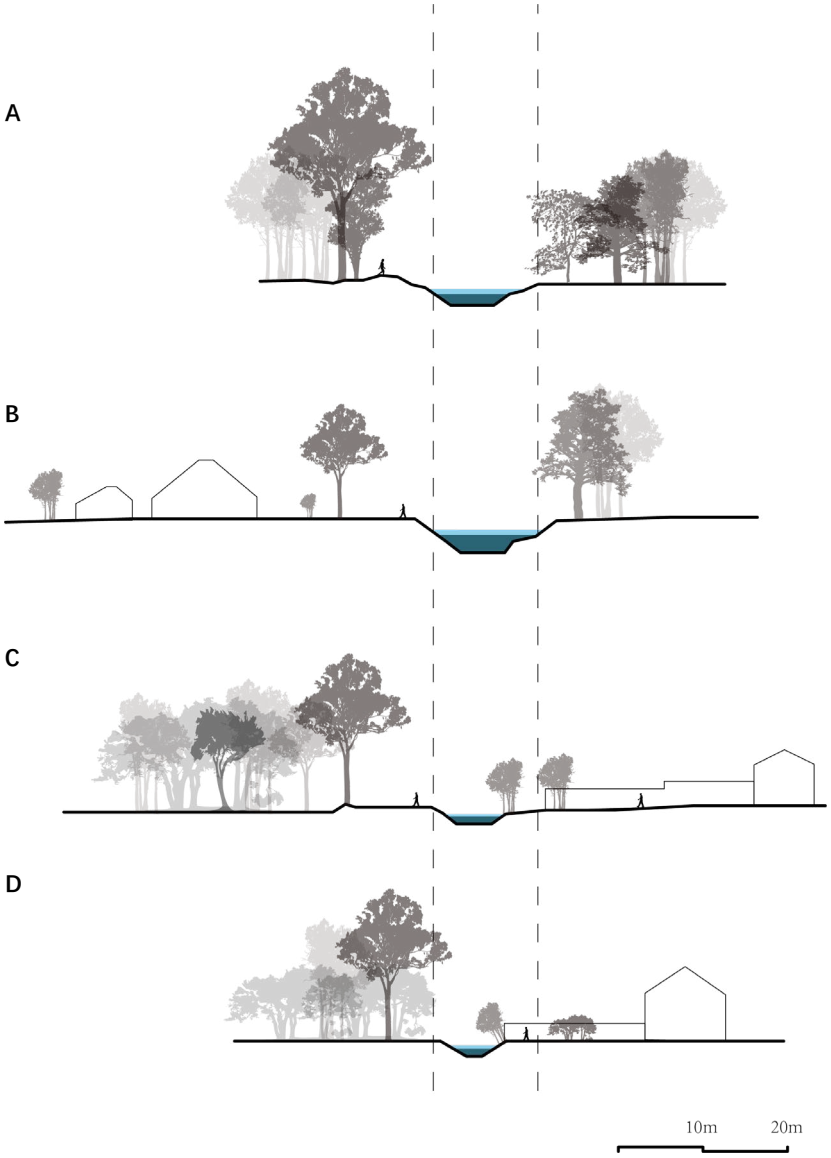


The existing water system connectivity methods mainly rely on artificial transportation, and some areas lack water system connectivity. On the one hand, it will lead to a shortage of agricultural water, and at the same time, it also represents a partial lack of ecological environment. So I hope to add more storage water bodies and ecological water bodies on the basis of the original water system to play a role in water conservation and water purification.

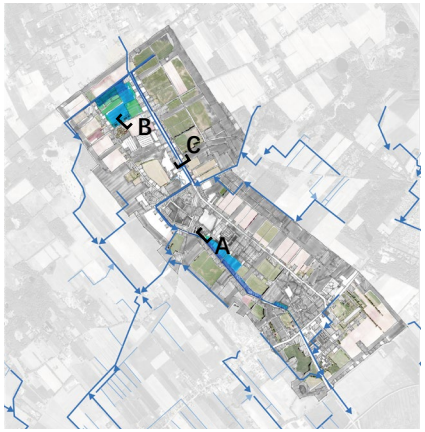
5.3.1.2 Problems and status of water systems

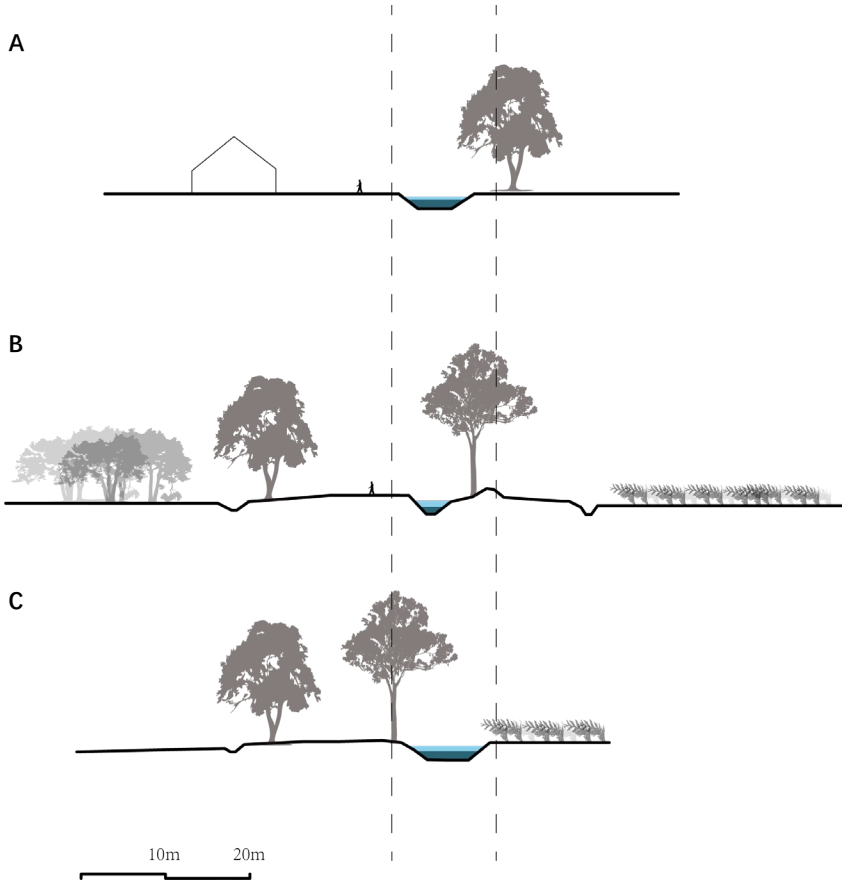
Every summer, there is a water shortage problem here, especially agricultural irrigation, which requires a large amount of water. However, due to the width of the channel and the lack of water storage area, farmers are forced to use external water sources, and the narrow river channel also causes The self-purification function of the water body cannot be exerted.



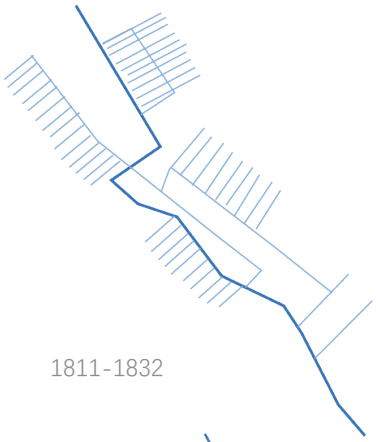


5.3.1.2 Problems and status of water systems

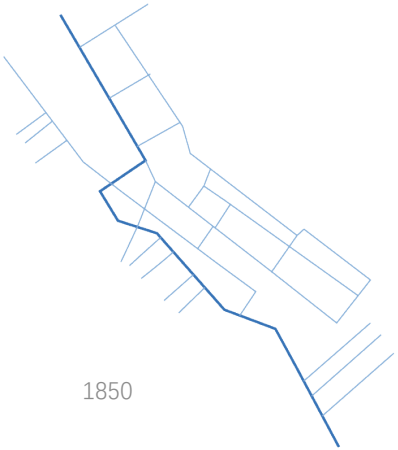




5.3.1.3 Hitorical water system mapping



1811-1832



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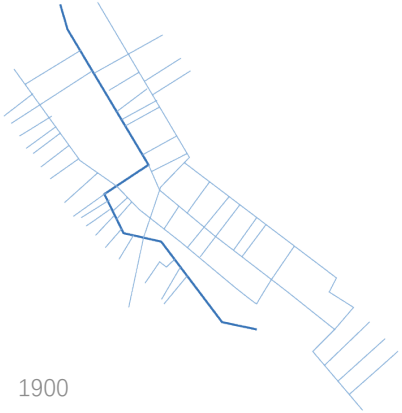

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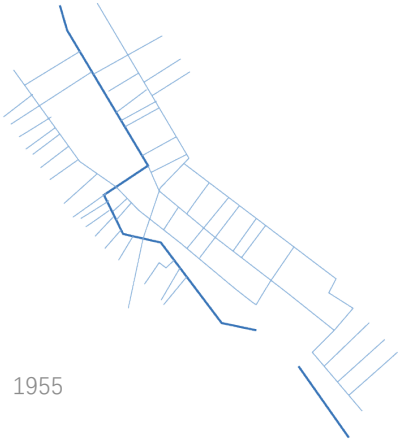

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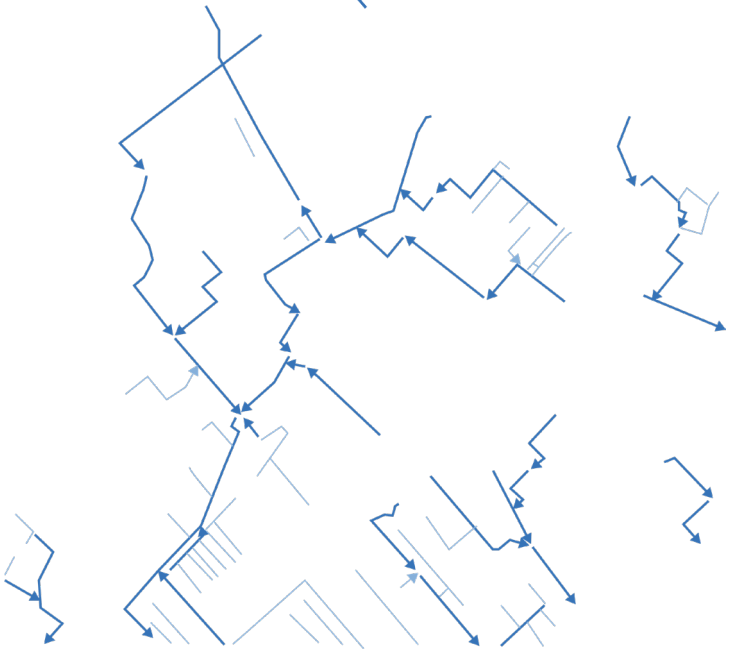

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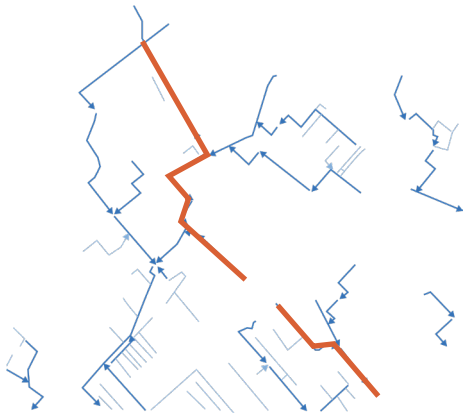
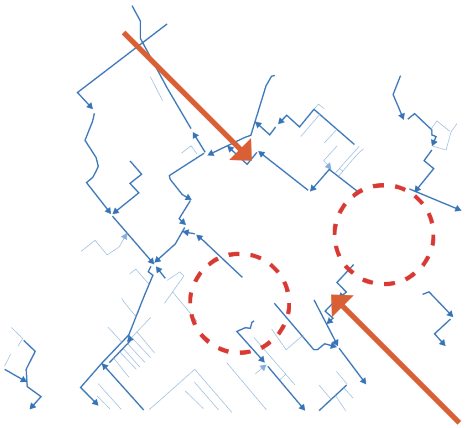
5.3.1.4 Design strategies for village water system



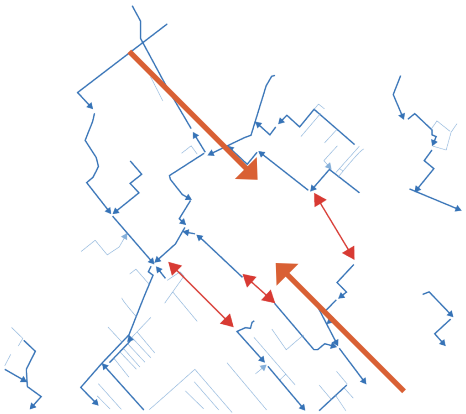
Restoration of a historically important water heritage:

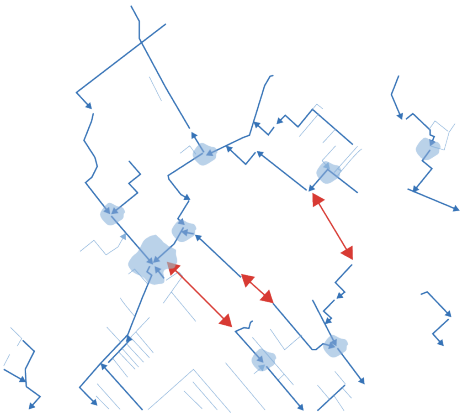
In the past, the Westerbrook river was an important irrigation and transport channel. But now it has lost its functional properties and is disconnected in the middle, so it should be reconnected spatially to enhance the connectivity of the water system.



Increasing water body connectivity

At the village scale, the water flows in a north-south direction, but there are problems with the connectivity of not only the important channels, but also the smaller canals, so the connectivity of the irrigation system should be enhanced at this level as well

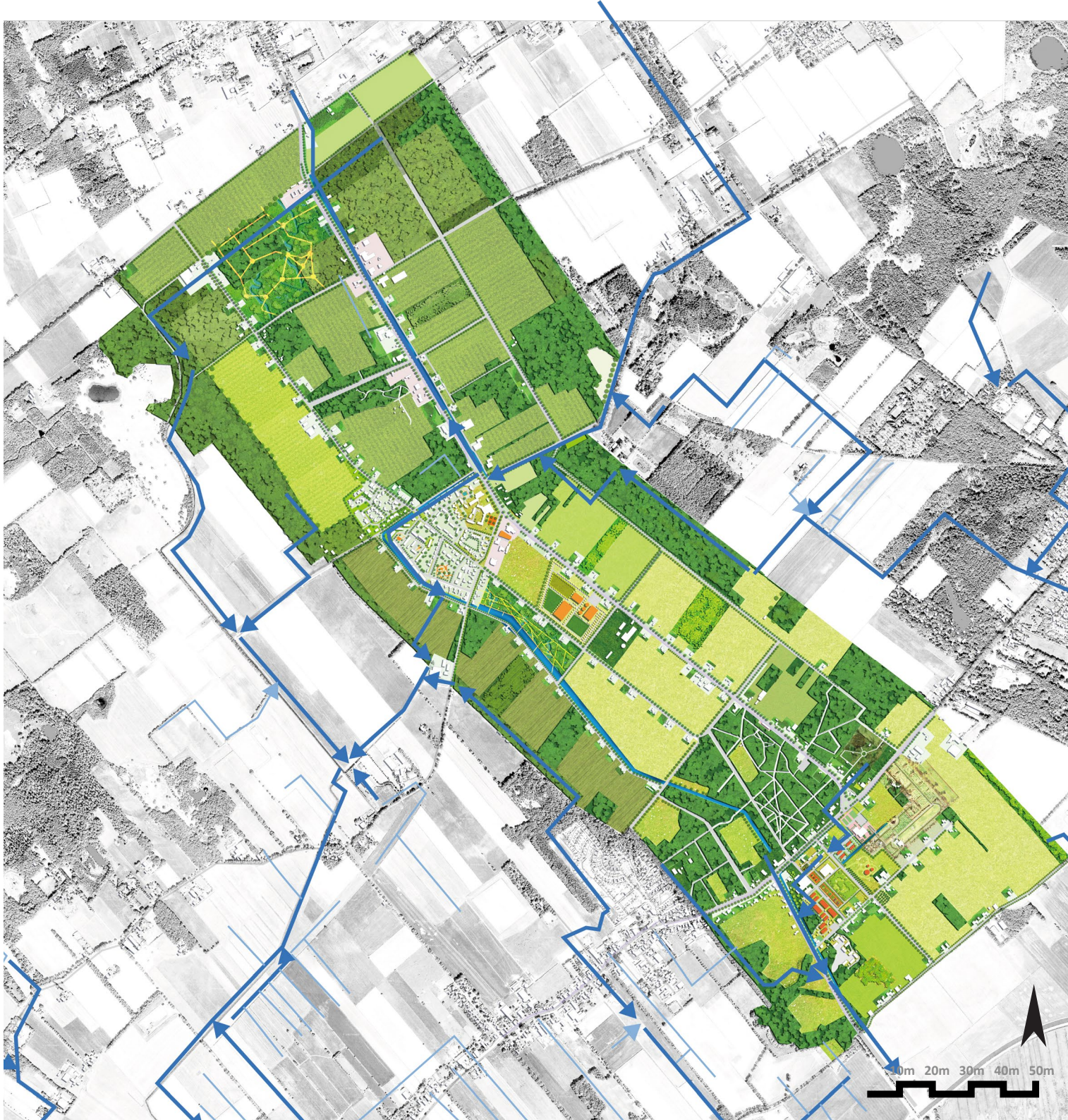




Increase in ecological wetlands

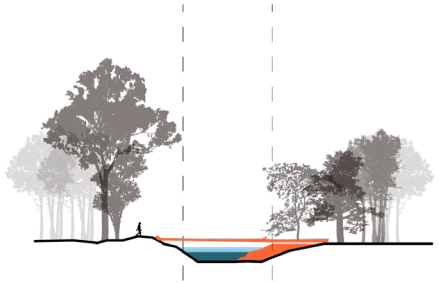
While enhancing the connectivity of the system, the enhancement of ecological functions should also be looked at. The addition of wetland and meadow water bodies at the intersection of water systems can be effective in providing water storage and increasing ecological and biological diversity.

5.3.1.5 Master plan of water system

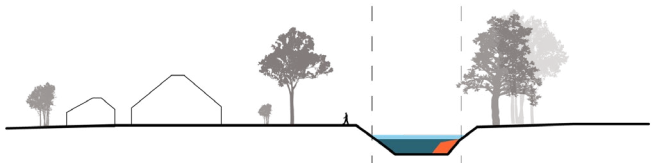


5.3.1.6 Design strategies for village water system

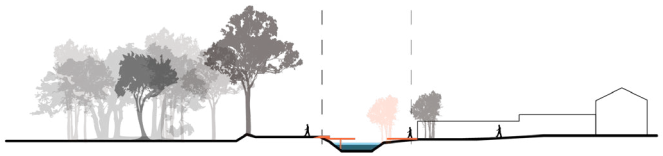
1 Water amusement



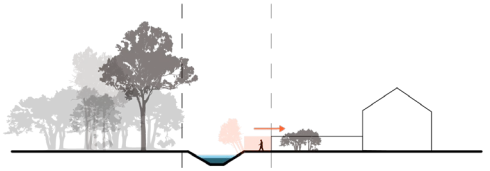
2 Widening of waterways



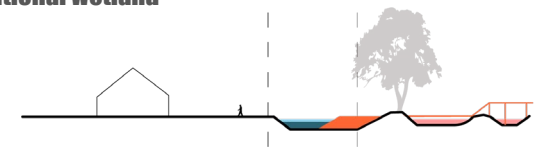
3 Neighbourhood space on the water



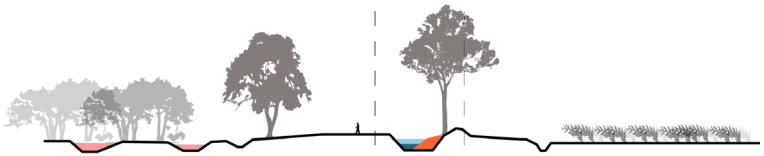
4 Open courtyard

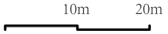


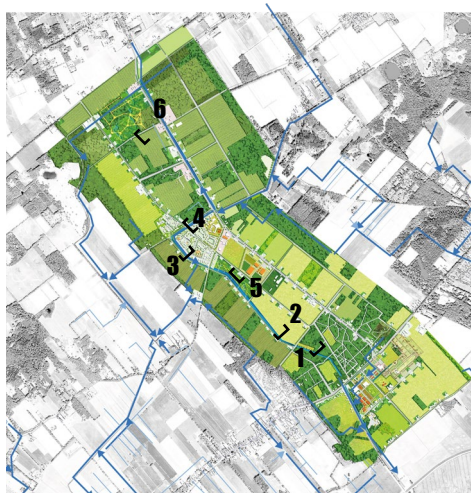
5 Recreational wetland



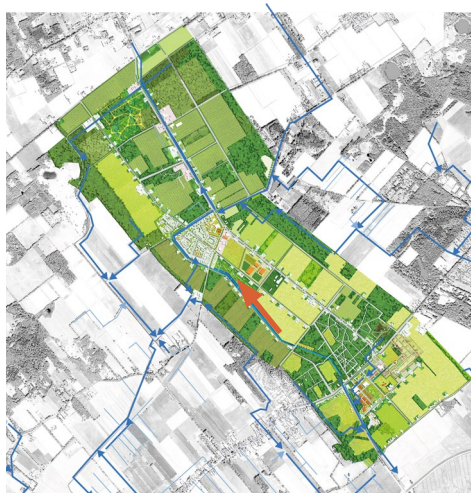
6 Ecological wetland

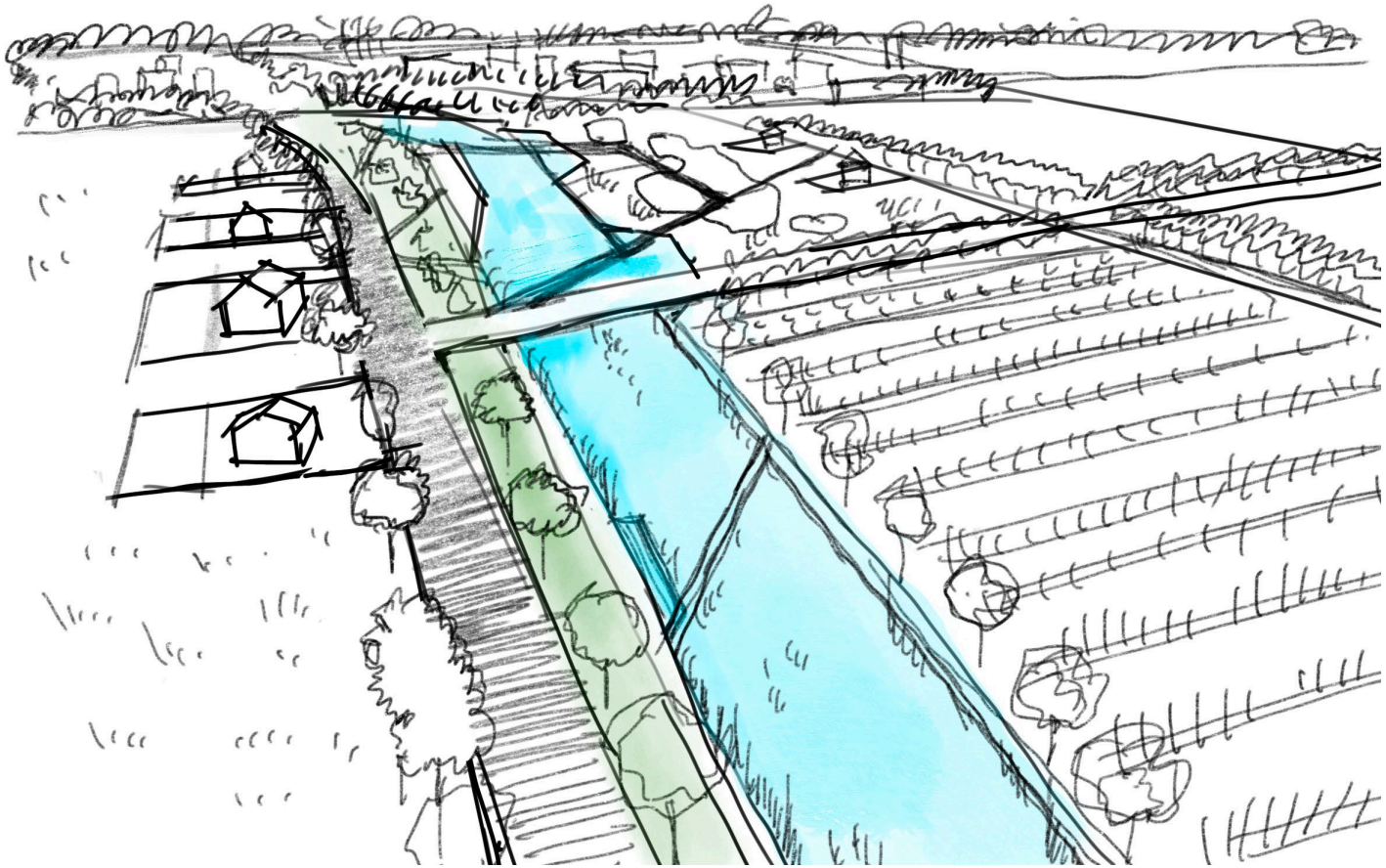




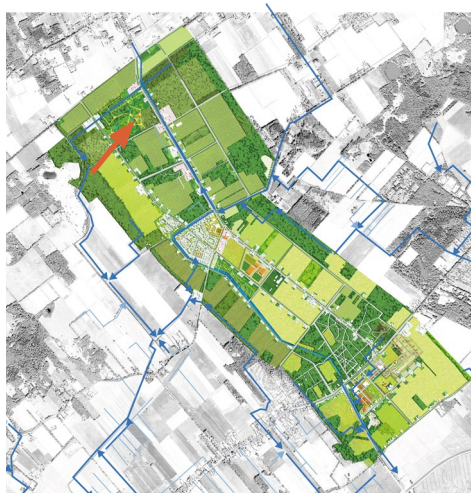


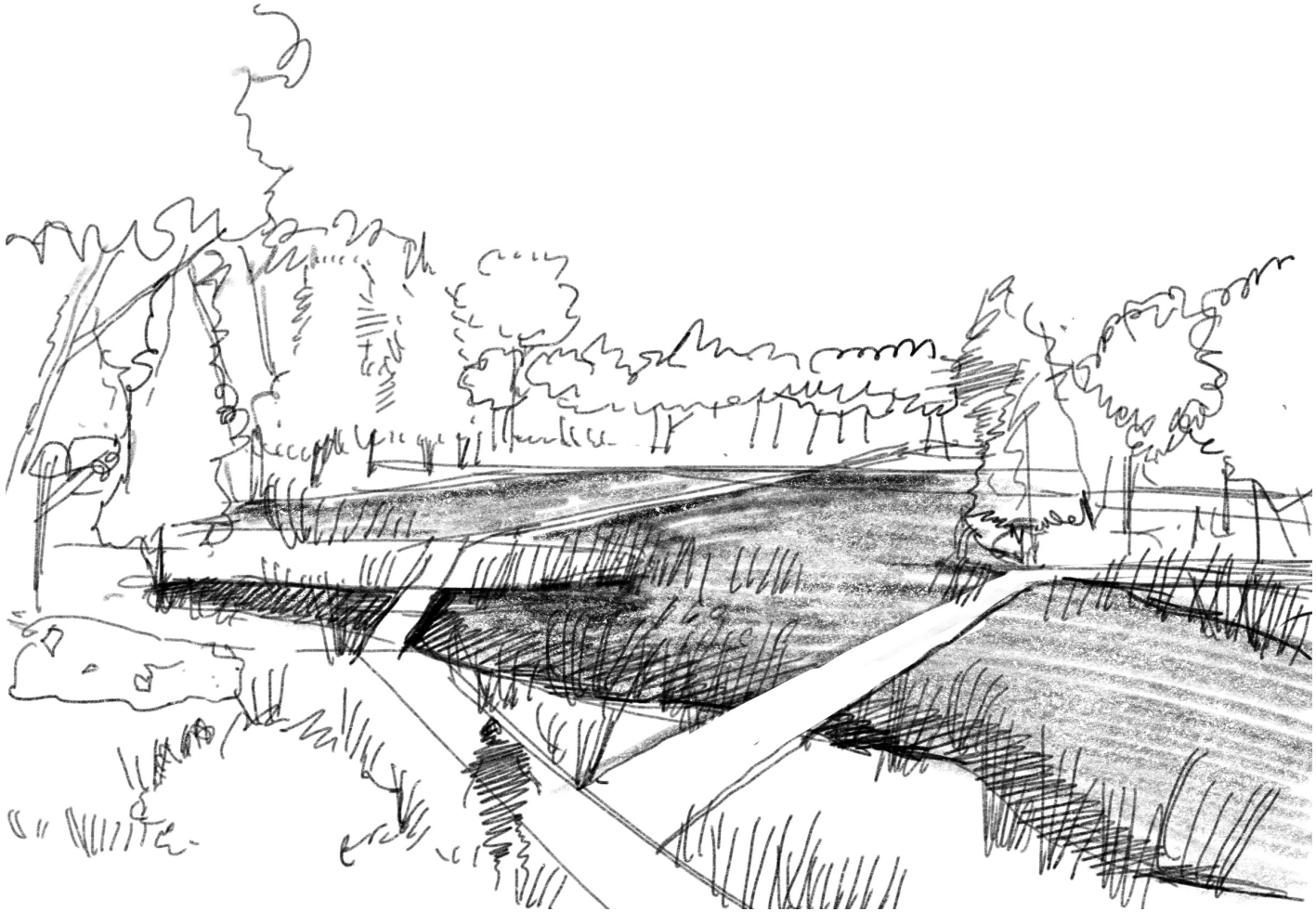
5.3.1.7 Rendering





5.3.1.7 Rendering



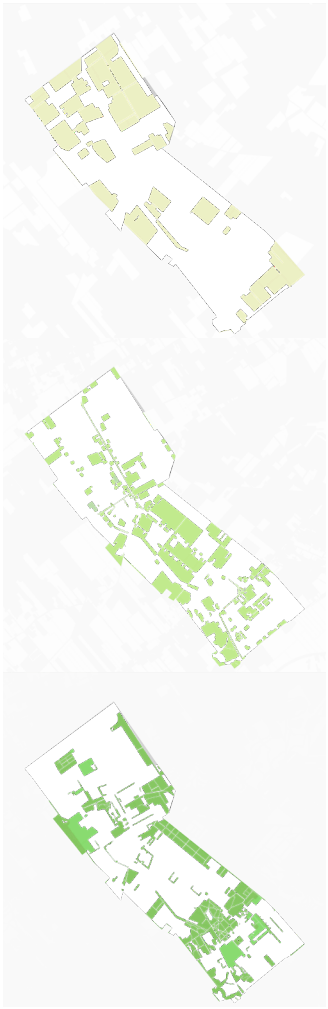


5.4. Green structure design

Crop 36%

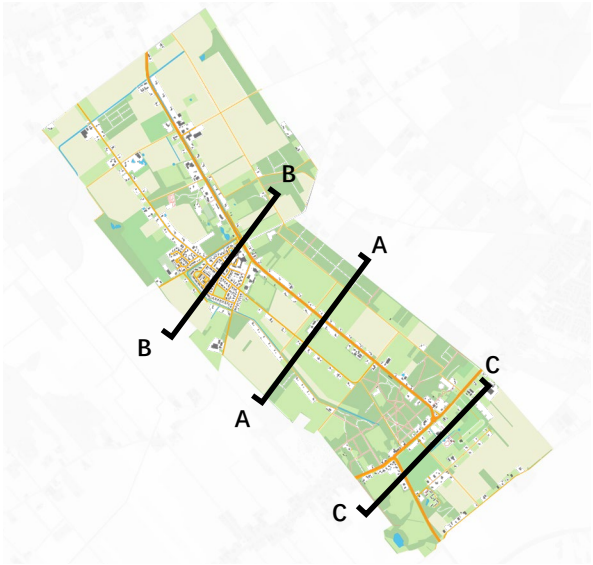
Graze 42%

Forest 22%

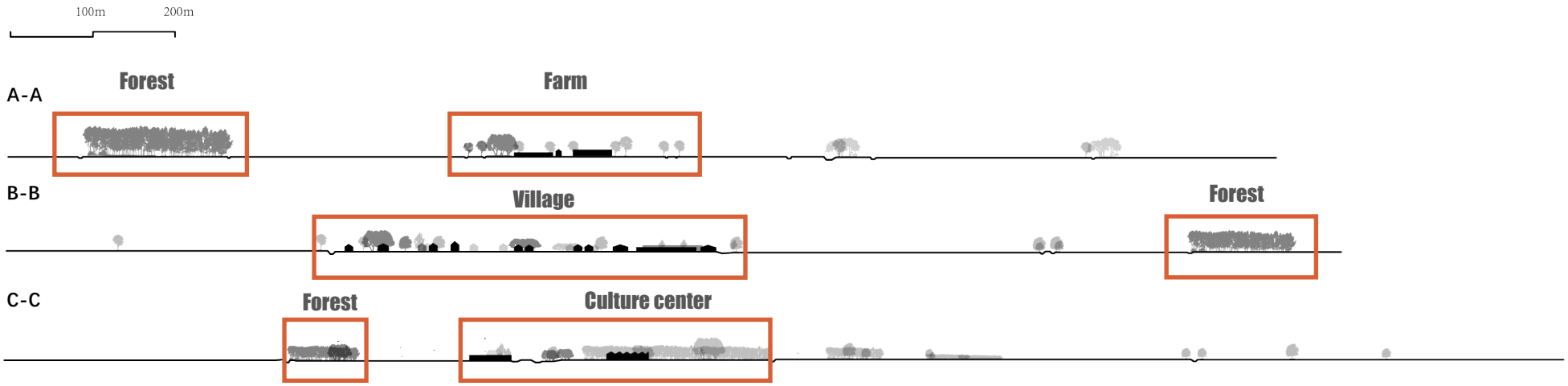


There are few green spaces with ecological functions on the site. The main ecological services provided are the woods on the site. As the main links and patches of green structures, they are the main ecological habitats for animals and plants. However, due to the influence of the agricultural structure, the green structure has become fragmented and isolated, so I converted part of the agricultural land into forestry land in the design. These converted green patches will serve as green islands to provide shelter for animals and plants.

5.4.1 Current status of green system



The existing green space structure is divided into small discontinuous communities by the role of agriculture, which is unable to form a complete ecological habitat, and at the same time, the green space is unable to provide sufficient recreational functions, so there is a need to strengthen the linkage between the green space as well as the formation of supporting recreational green space in the residential area.



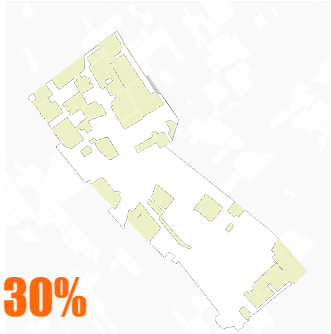
5.4.2 Master plan of green system

Green boundary

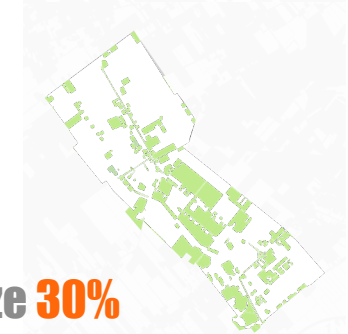
Green connection

5.4.3Functional framework of green system

5.4.4 Green structural transformation



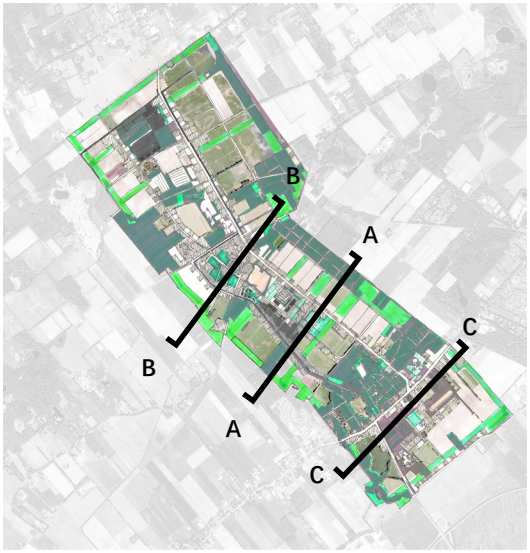
Crop 30%

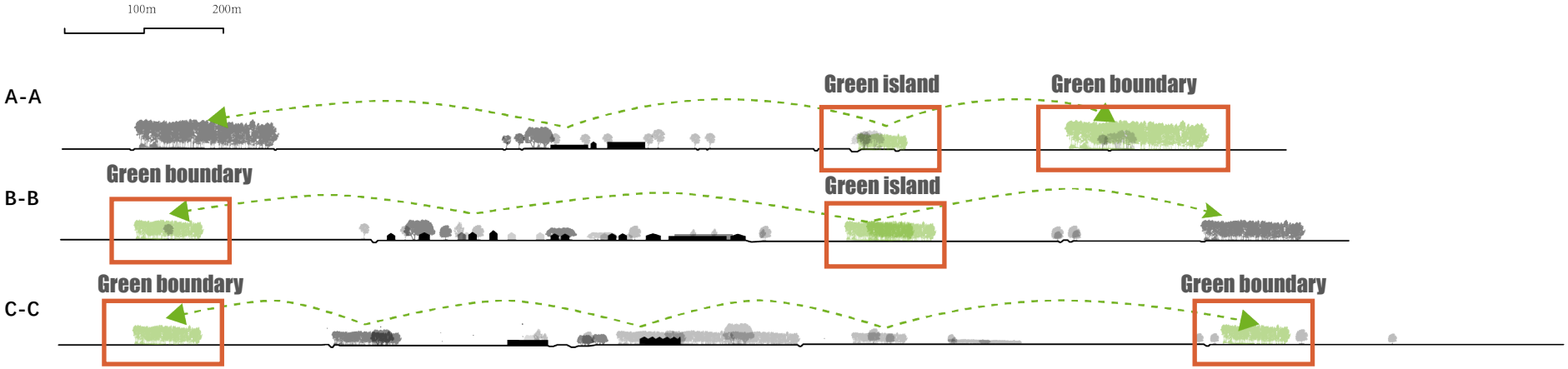


Graze 30%

Forest 40%

5.4.5 Sections of green structure





5.4.6 Rendering

5.4.7 Habitat enhancement

5.4.8 Herb rich grazing base

Subsidence in the province of Drents is mainly caused by oxidation of the peat soil, which is present in part of the province. Oxidation happens when the ground water level is too low, leading the ground to be dry, which leads to the oxidation and collapsing of the ground. In Drents the water levels are kept artificially low, as this is easier for farmers to farm on. The main problems with sub-sidence are located close to the Gouda region, where the whole city is subsiding each year, leading to economic losses. The issue is becoming more pressing, as it increases the flooding risk, the eco-nomic losses get bigger by the year and the rest of the region is slowly getting dragged along.

Percentage of nitrate subsidence

Salinised plants

https://www.salineagricultureworldwide.com/salinization

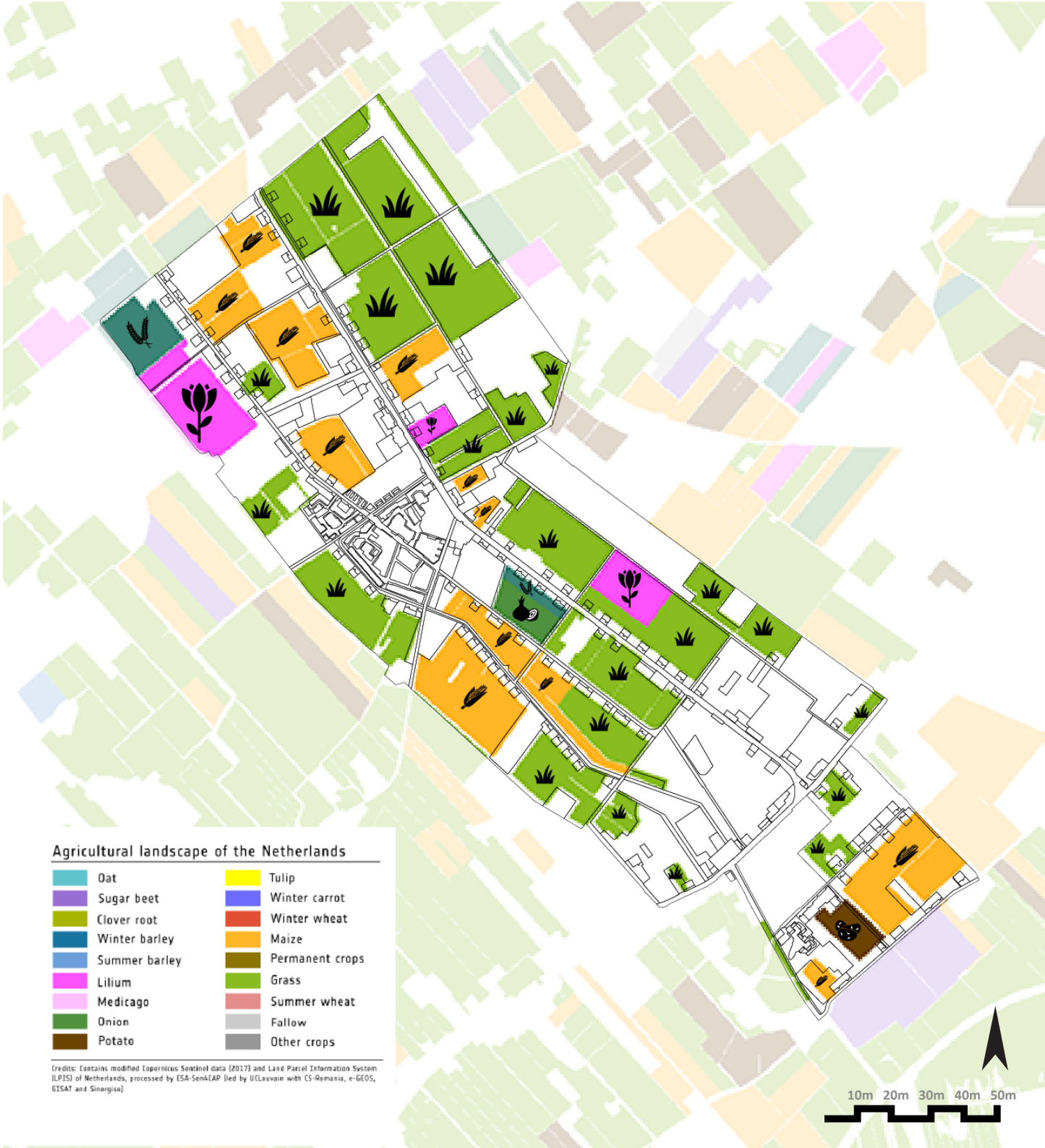
Extensive planting

https://www.salineagricultureworldwide.com/salinization

Fruit trees affected by salinisation

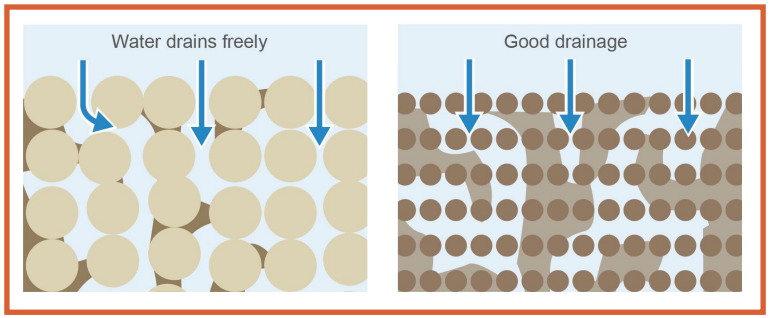
https://www.salineagricultureworldwide.com/salinization

5.4.9 Grazing base



5.4.10 Soil strategy

SOIL TYPE



Largest soil particle at 0.06–2 mm

Smaller than sand but bigger than clay at 0.002–0.06 mm

Smallest particle less than 0.002 mm

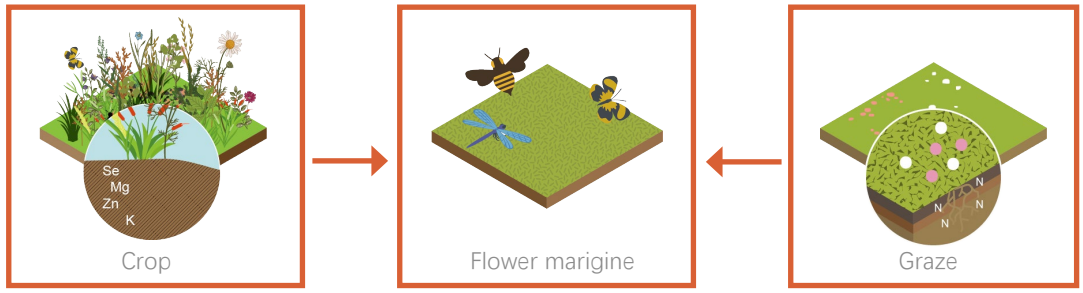
Soil Drainage: The clay and sand combination in the soil affects its drainage properties. Clay holds water and can be prone to waterlogging, while sand has better drainage capabilities. This can impact the suitability of the soil for pasture, as excessive water retention or poor drainage can hinder plant growth. Farmers may need to implement appropriate soil management practices, such as proper land leveling, irrigation management, or soil amendments, to ensure optimal pasture growth and productivity.

Grazing strategy

Mitigation of pollution of arable land

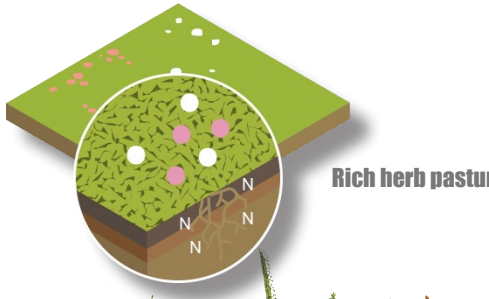
Connection

Pasture enhancement

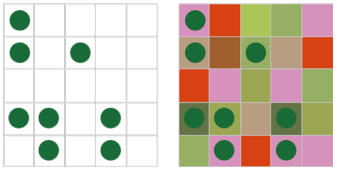


Grassland planting will be enhanced in three ways, with a new herbaceous layer that will attract and provide habitat for a variety of specific animals. The complex herbaceous planting will enhance the ecological role of the grazing area and add to the landscape hierarchy of the grazing area. Herbaceous plants will also mitigate agricultural pollution from the planting, and in the transition zone between the two planting patterns, the combination of flowers and herbs will not only provide habitat for pollinators, but will also serve as a bridge to other grassland and landscape elements.

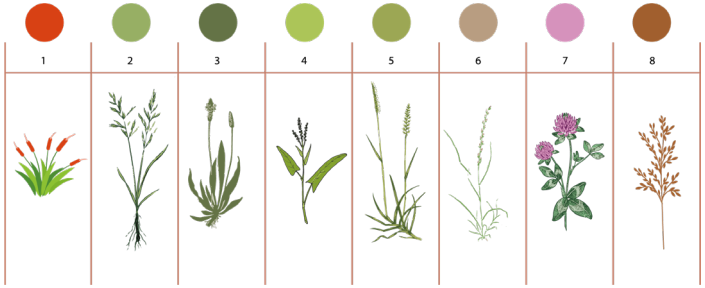
5.4.11 Soil strategy--Pasture strategy



Rich herb pasture

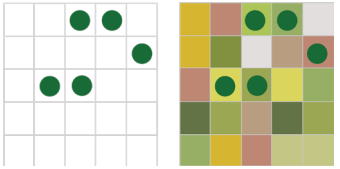


Color pattern & Grass base

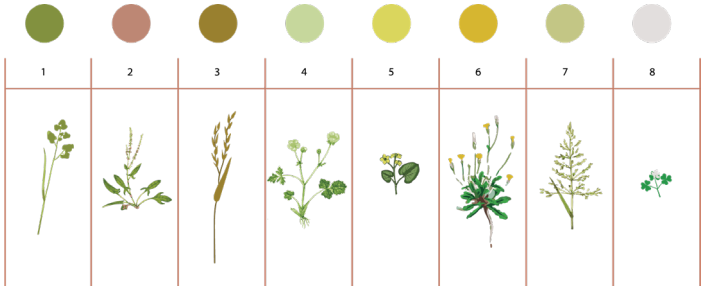


1. Timothy (Phleum pratense)
2. Meadow fescue (Festuca pratensis)
3. Amaranthus macrophylla (Amaranthus macrophyllus)
4. Common sorbet (Sorbus aucuparia)
5. Crowned dogwood (Cornus coronata)
6. Perennial ryegrass (Lolium perenne)
7. Red clover (Trifolium pratense)
8. June grass (Koeleria macrantha)

Pattern 1



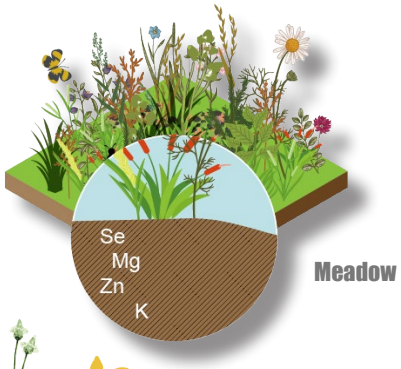
Color pattern & Grass base



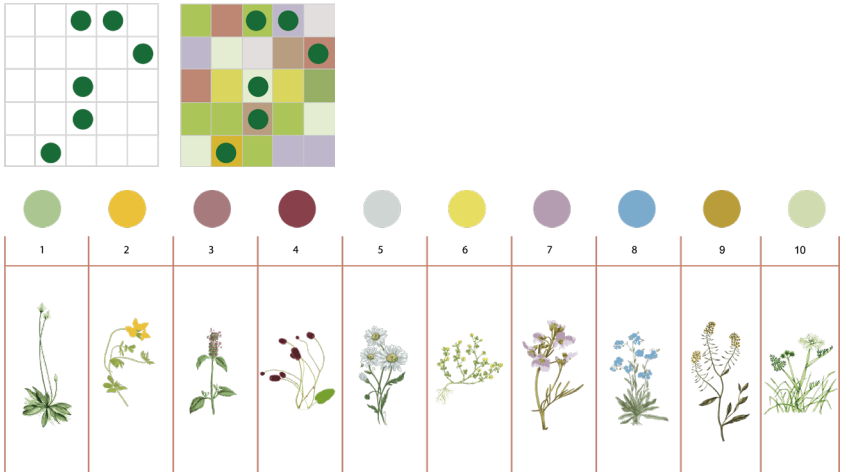
1. Cock's Foot - Dactylis glomerata
2. Sheeps Sorrel - Rumex acetosella
3. Tall Fescue - Festuca arundinacea
4. Meadow Buttercup - Ranunculus acris
5. Giant Marsh Marigold - Caltha palustris
6. Cat's ear - Hypochaeris radicata
7. Rough Meadow-grass - Poa trivialis
8. White Clover - Trifolium repens

Pattern 2

5.4.12 Soil strategy--Arable land strategy



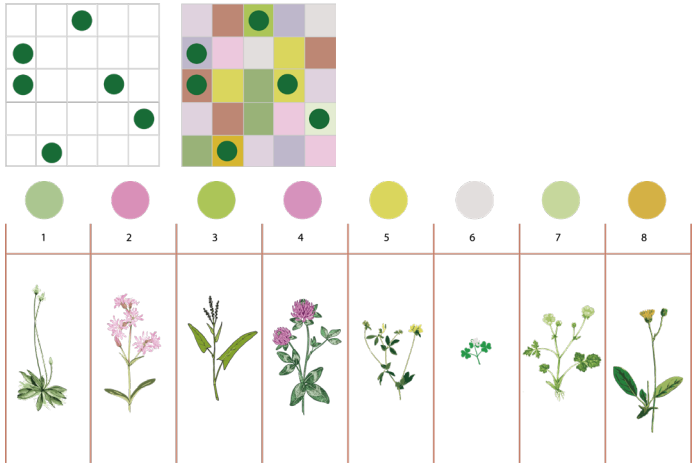
Meadow



Stage 1: Deep water level

April and September

1. Narrowleaf plantain
2. Birdsfoot
3. Selfheal
4. Great burnet
5. Oxeye daisy
6. Lesser trefoil
7. Cuckoo-flower
8. Tufted Forget-me-not
9. Great yellow-cress
10 Tubular Water-dropwort

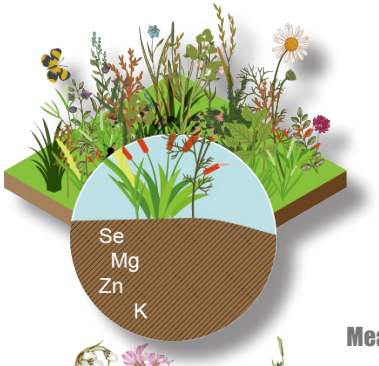


Stage 2: shalow water level

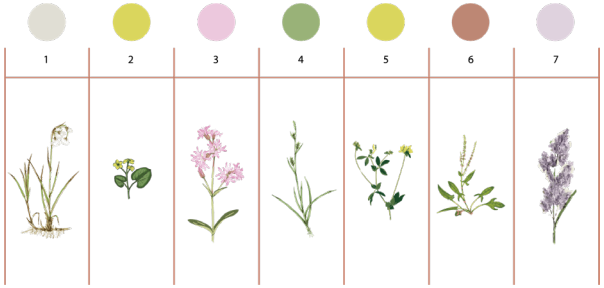
October and February

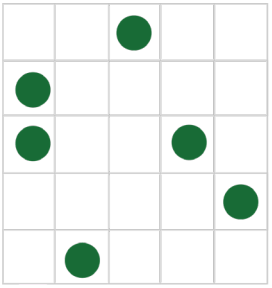
1. Narrowleaf plantain
2. Ragged robin
3. Common sorrel
4. Red clover
5. Common bird's-foot-trefoil
6. White clover
7. Meadow Buttercup
8. Common hawkweed

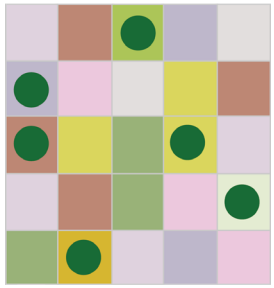
5.4.13 Soil strategy--Arable land strategy



Meadow





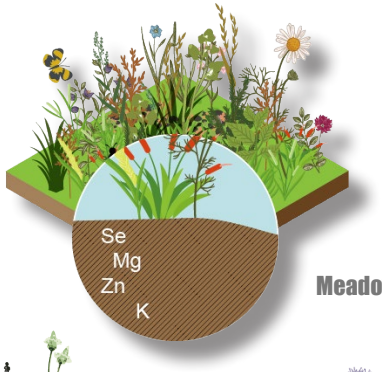


October and February

Color pattern & Grass base

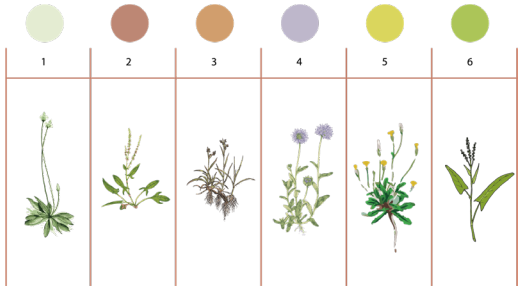
1. Common Cotton grass - Eriophorum angustifolium
2. Giant marsh marigold - Caltha palustris
3. Ragged robin - Lychnis flos-cuculi
4. Carnation Sedge - Carex panicea
5. Greater Birds's foot Trefoil - Lotus pedunculatus
6. Sheep's Sorrel - Rumex acetosella
7. Purple small-reed - Calamagrostis canescens

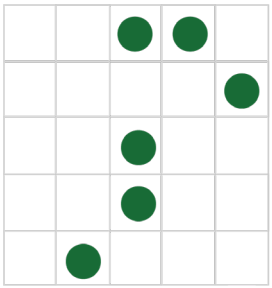
5.4.14 Soil strategy--Arable land strategy



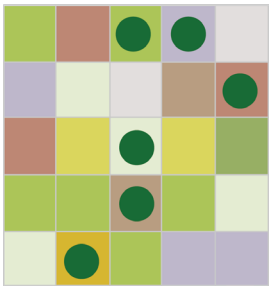
Meadow

April and September



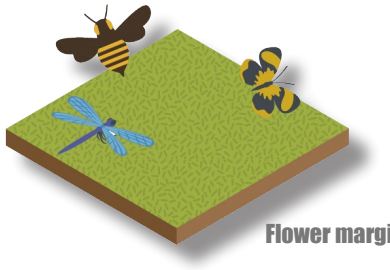


Color pattern & Grass base

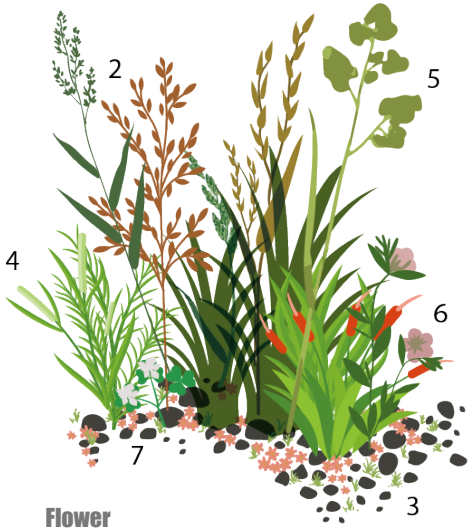


1. Narrowleaf Plantain
2. Sheep's Sorrel
3. Field Wood-rush
4. Sheep's bit
5. Cat's ear
6. Common sorrel

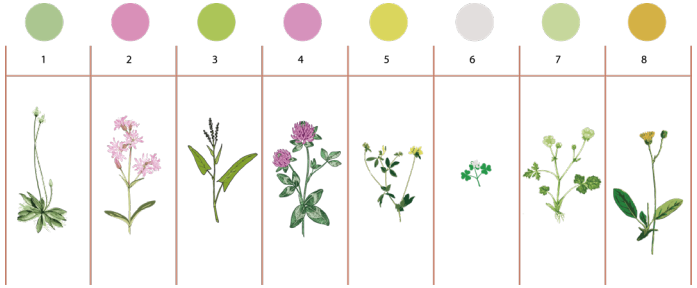
5.4.15 Soil strategy--Colourful margine strategy

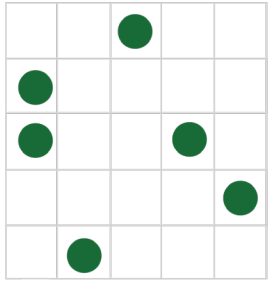


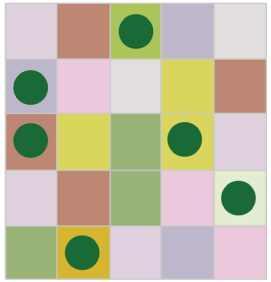
Flower margine



Flower



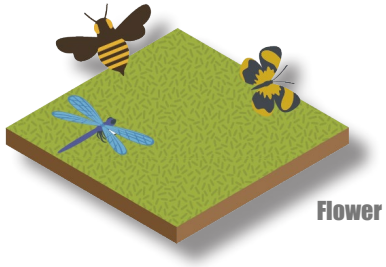




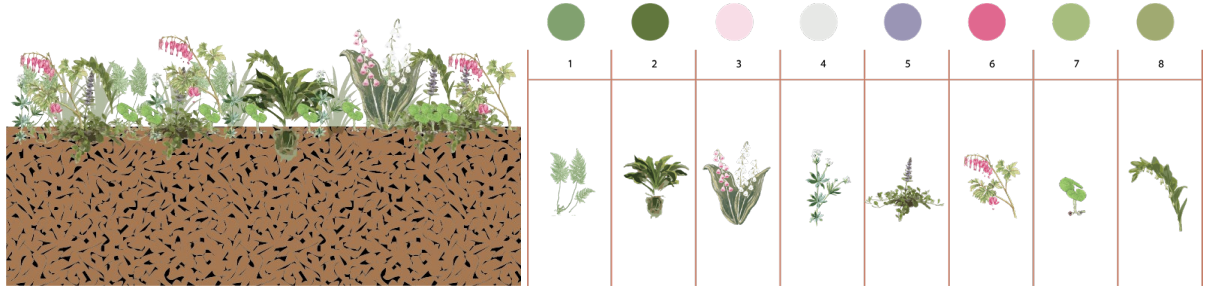
Color pattern & Grass base

1.Tall fescue
2.June grass
3.Timothy (Meadow cat's-tail)
4.Creeping fescue
5.Cock's foot
6.Red clover
7.White clover

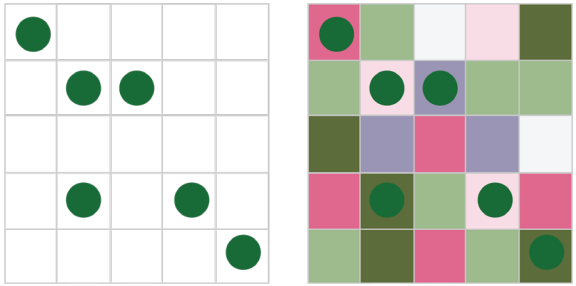
5.4.16 Soil strategy--Colourful margine strategy



Flower marigine



Shaded space plants



Color pattern & Grass base

1. Dryopteris spp - Dryopteris species (fern)
2. Hostas - Hosta species (ornamental plant)
3. Lily of the Valley - Convallaria majalis
4. Sweet Woodruff - Galium odoratum
5. Bugleweed - Ajuga reptans
6. Bleeding Heart - Lamprocapnos spectabilis (formerly known as Dicentra spectabilis)
7. Rough Meadow-grass - Poa trivialis
8. White Clover - Trifolium repens

5.4.17 New planting sections

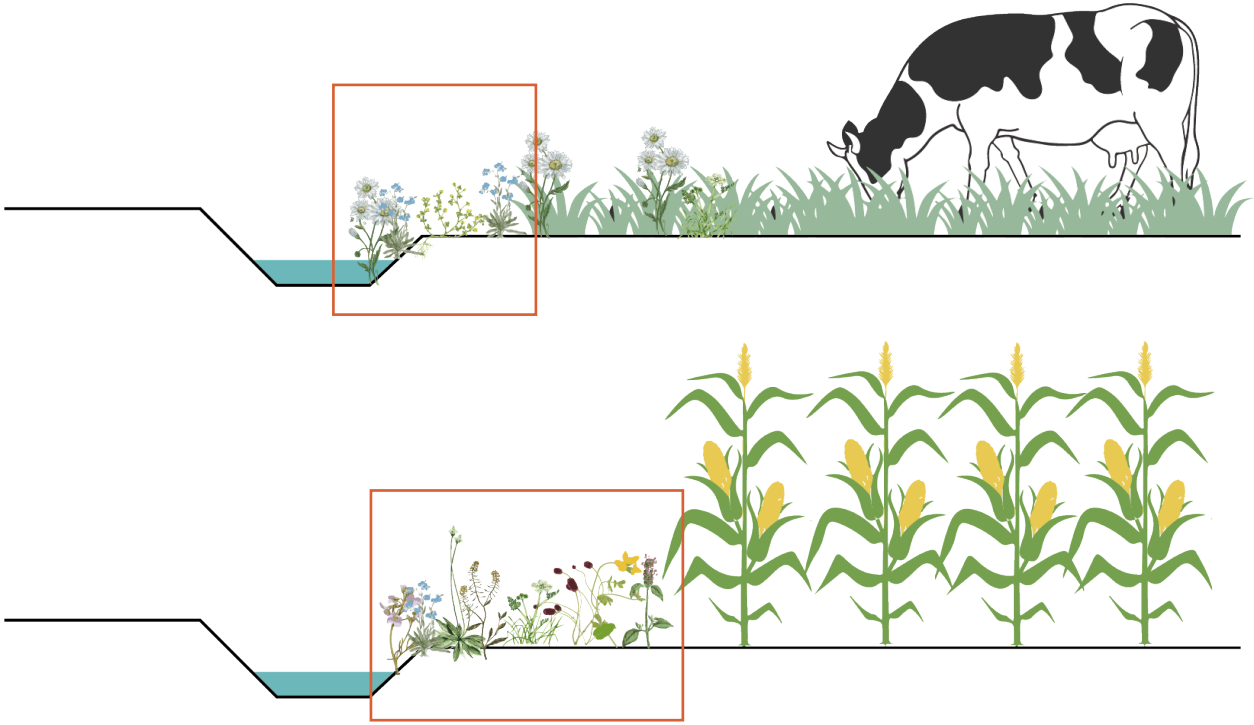
New grazing combination

During cultivation of arable land

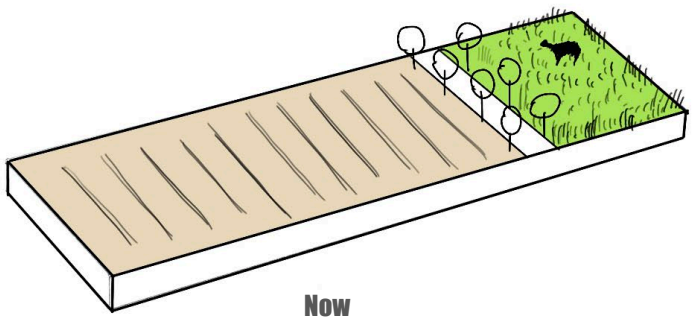
Soil restoration during fallow periods

5.4.18 New planting sections

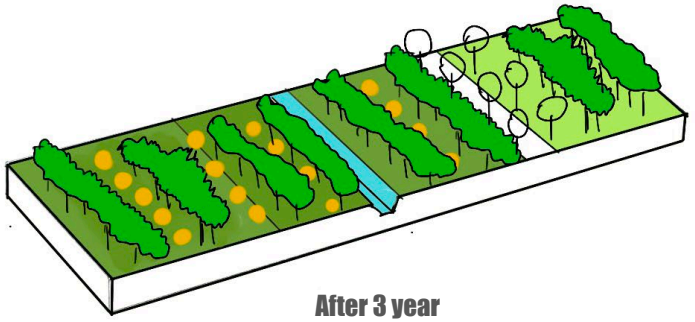
Flower margins as connections



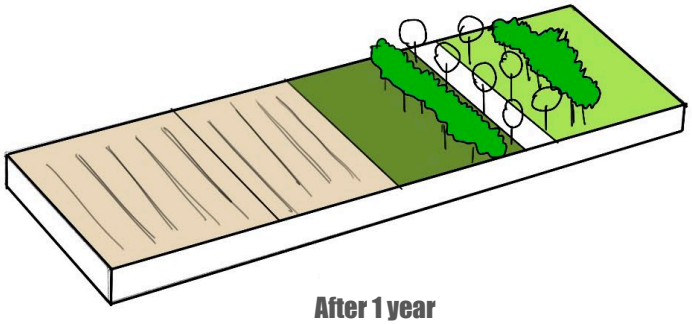
5.4.19 Future evolution of plantation



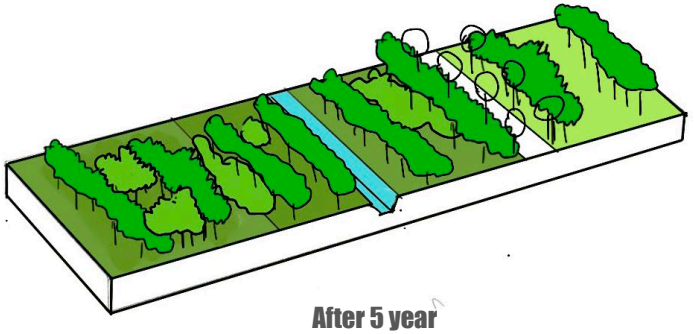
Now



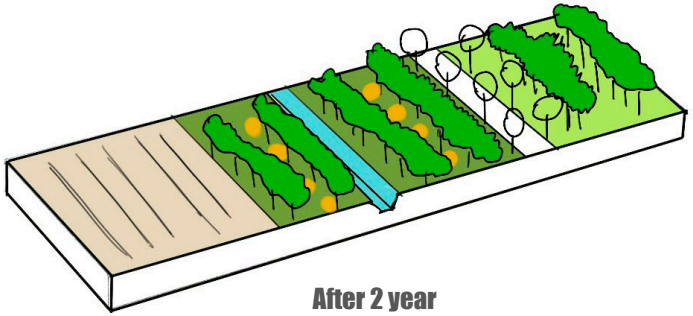
After 3 year



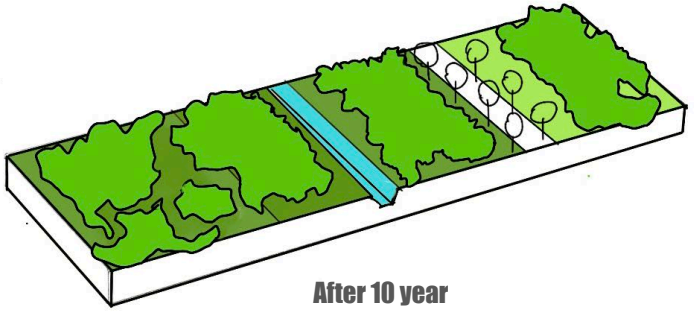
After 1 year



After 5 year

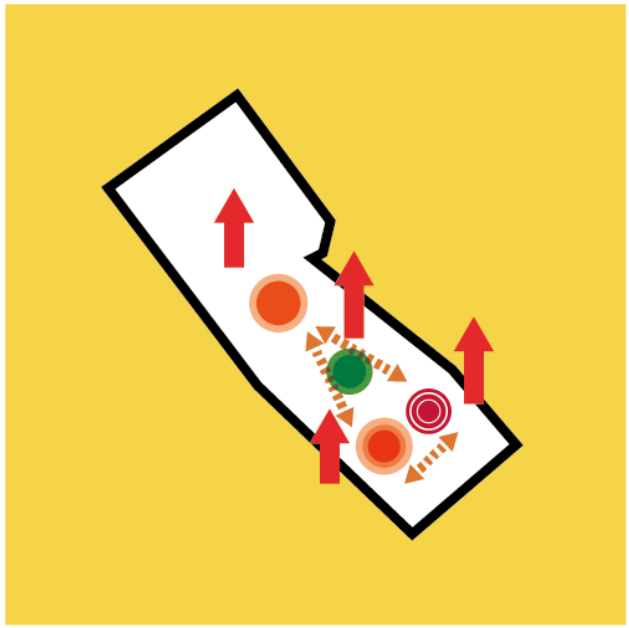


After 2 year

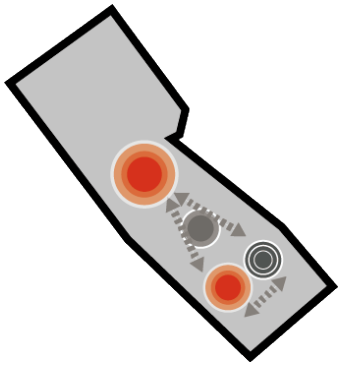


After 10 year

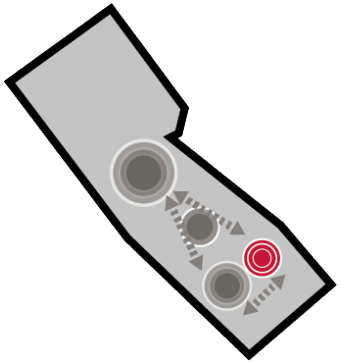
5.5 Hub design vision



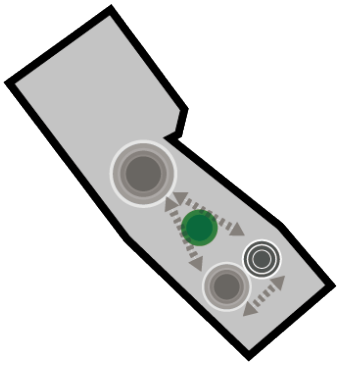
Two social hubs: The local population is mainly concentrated in the village space, but due to the high population outflow, the existing resources in the village are not suitable for the current living needs, so it is extremely necessary to improve the living standard of the local population.



Tourism hub: The tourist centre is mainly dominated by the local museum, which has developed a complete itinerary centred on the museum, but the existing structures are gradually falling into disuse due to lack of maintenance and management



Collective farming hub: Collective farms have been an element of local lifestyle and spatial composition in the past, but the current social environment is not necessarily suitable for a collectivist lifestyle, so the establishment of a collective factory can reduce the production costs of the local population and at the same time perpetuate the spiritual legacy of collectivism



5.5.1 Structure of hubs

5.5.1.2 Social hub--Willemsoord

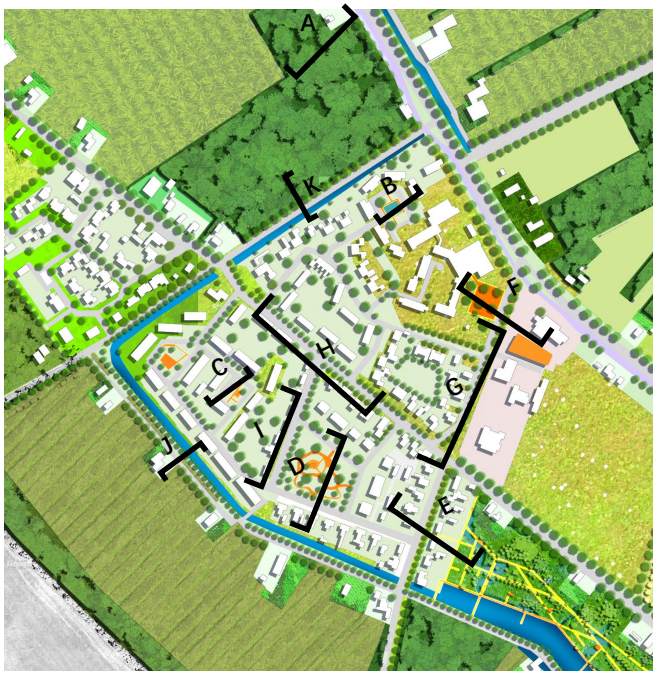
5.5.1.3 Current situation and functional zoning

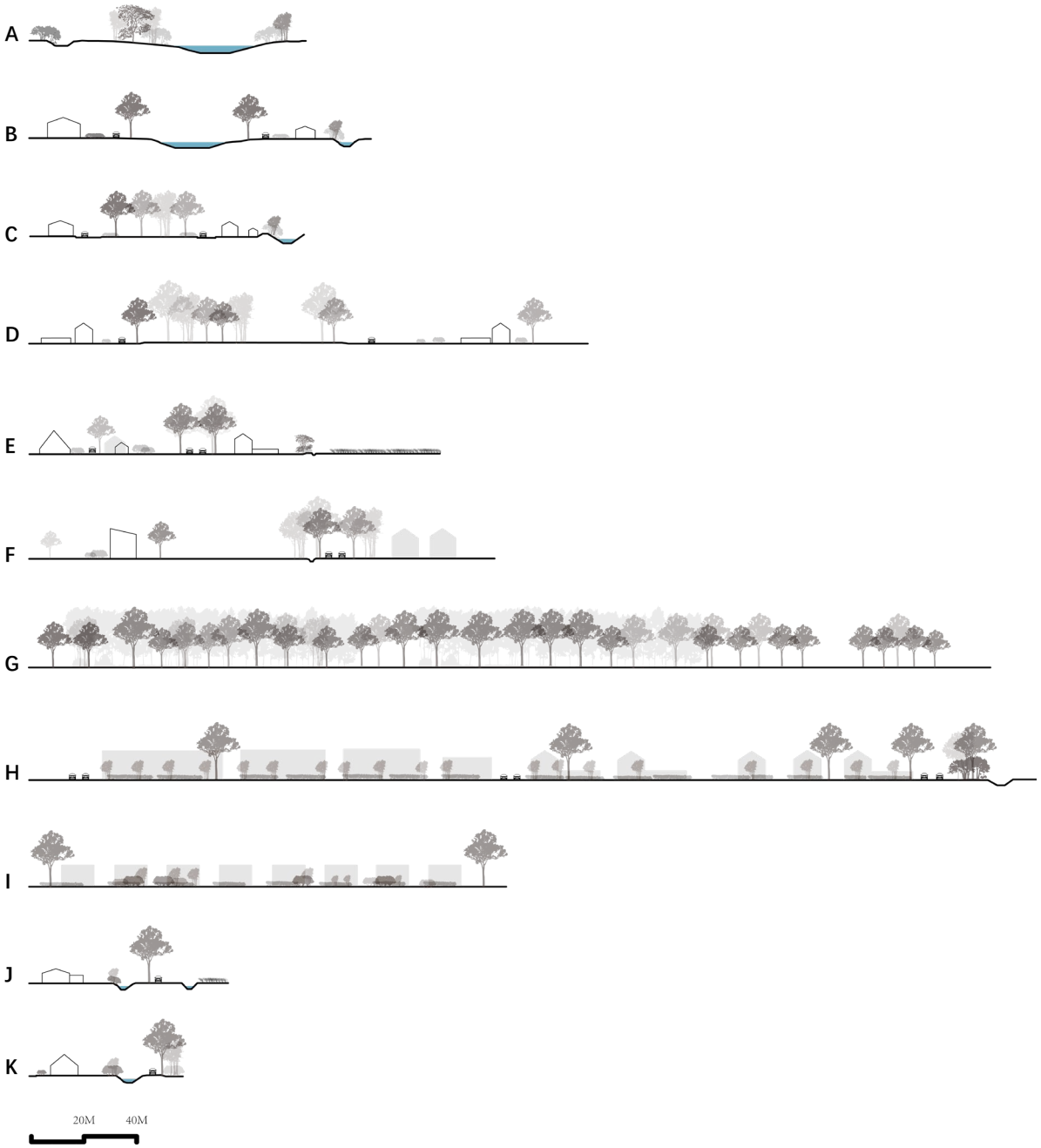
Functional core

Upgrading of residential areas

Recreation areas

5.5.1.4 Sections





5.5.1.5 Problems

1. Functional deficiency
2. Lack of recreation
3. Lack of character in the neighbourhood
4. The streets are planted in a monotonous and boring way

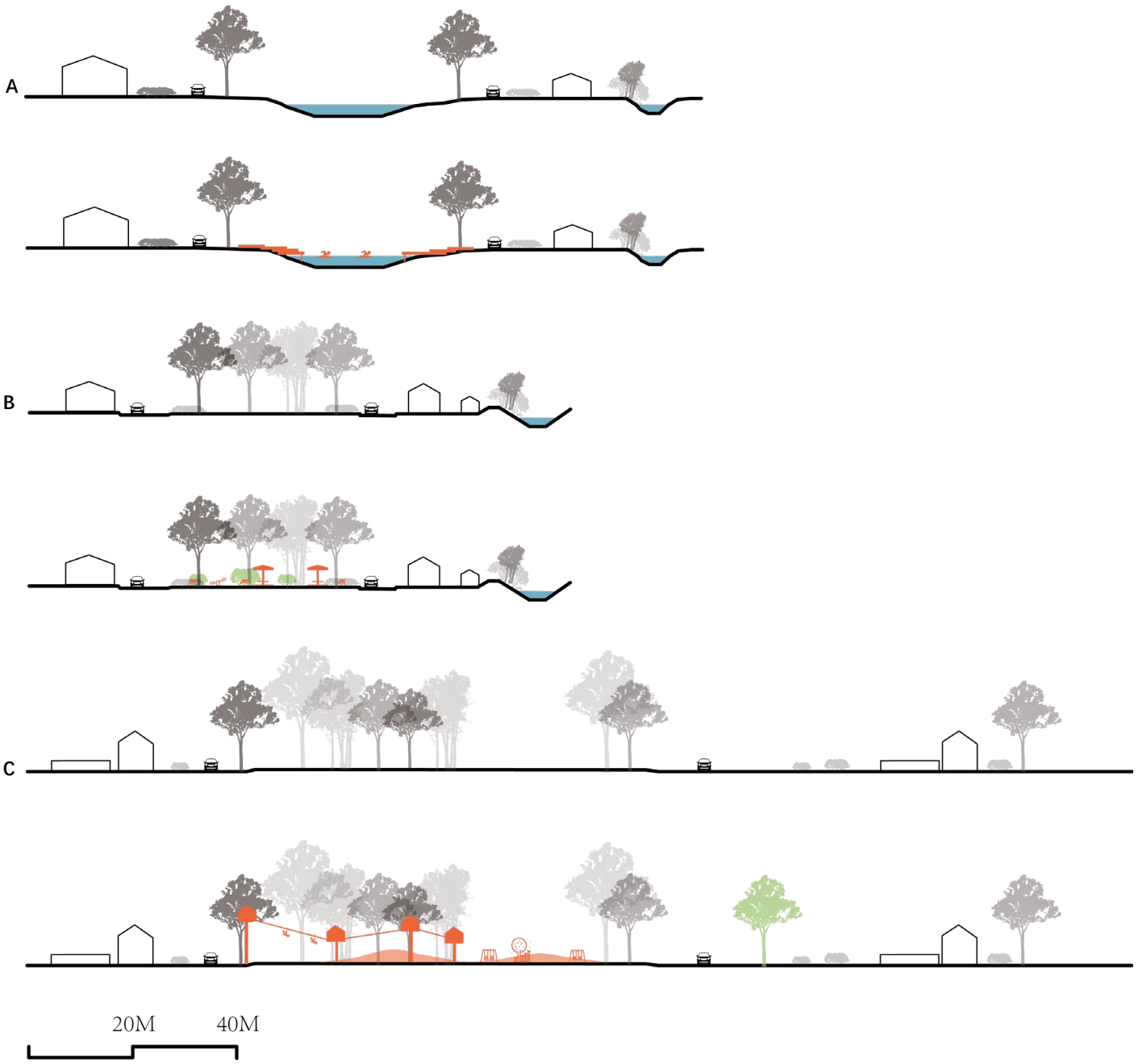

5.5.1.6 Strategies
1. Add new community features
2. Provide new space for recreational activities
3. Modify roadway plantings
4. The streets are planted in a monotonous and boring way

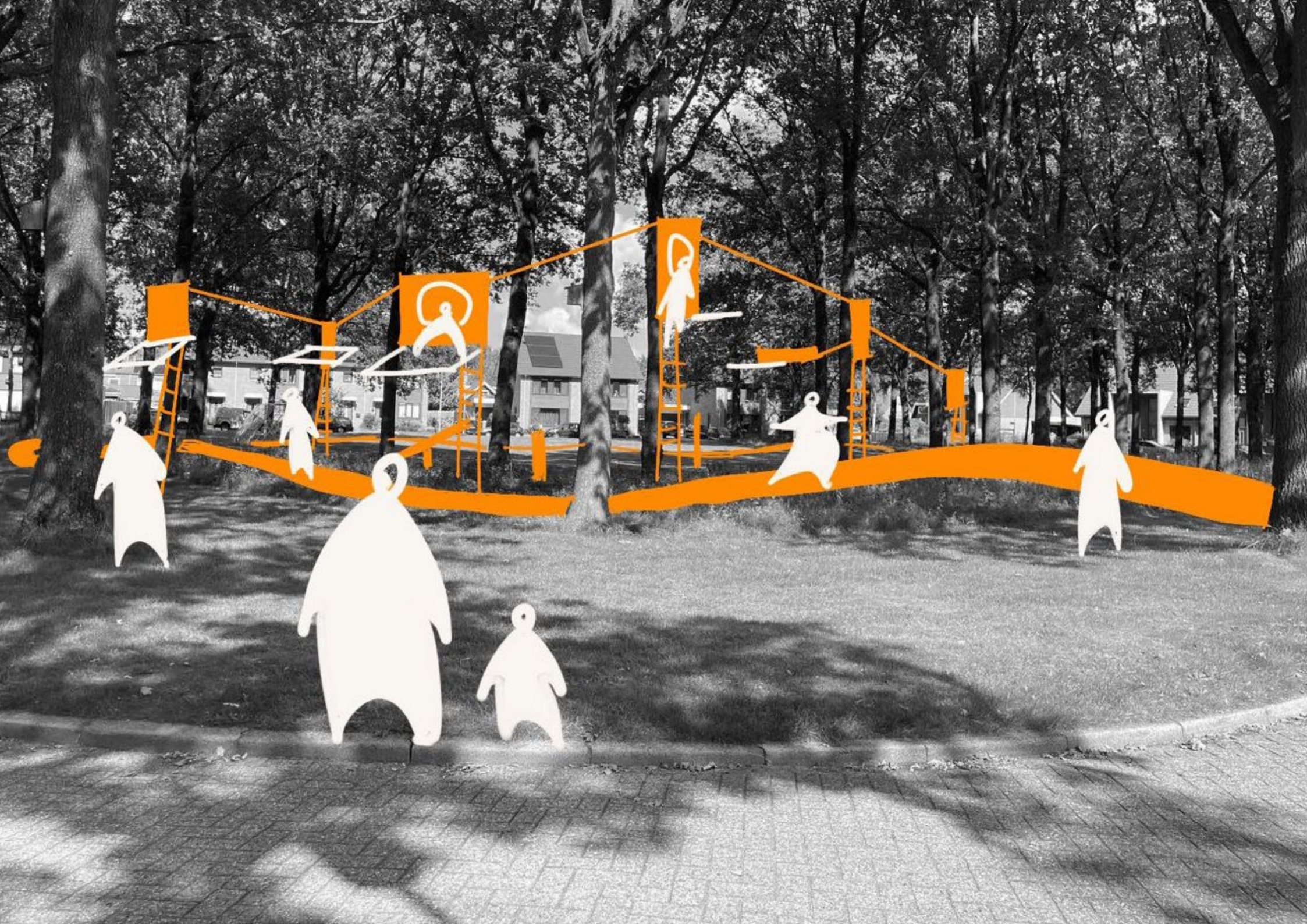
5.5.1.7 Master plan of social hub

5.5.1.8 Sections of functional core

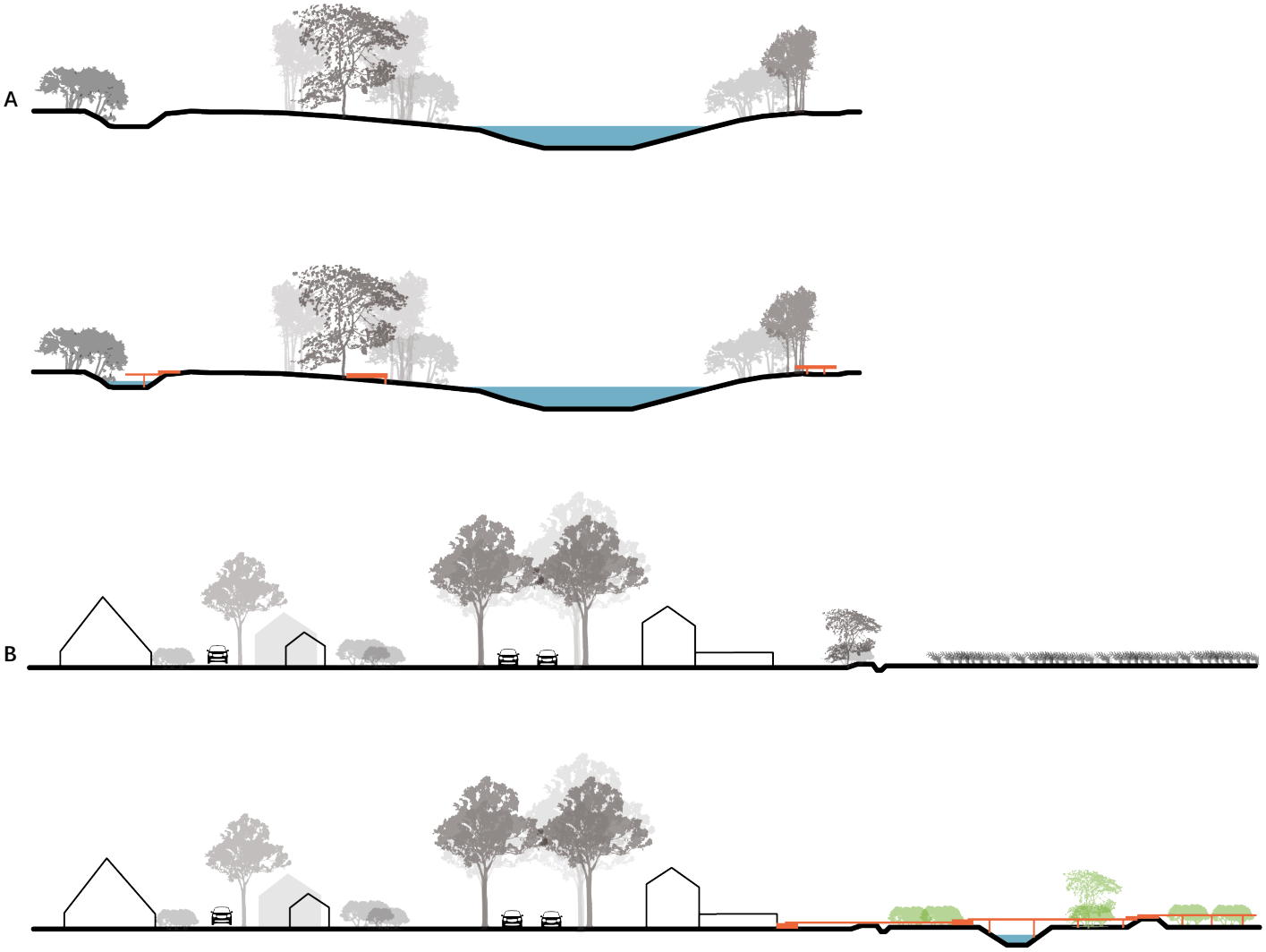
5.5.1.9 Zoning plan of blocks

5.5.1.10 Sections of blocks

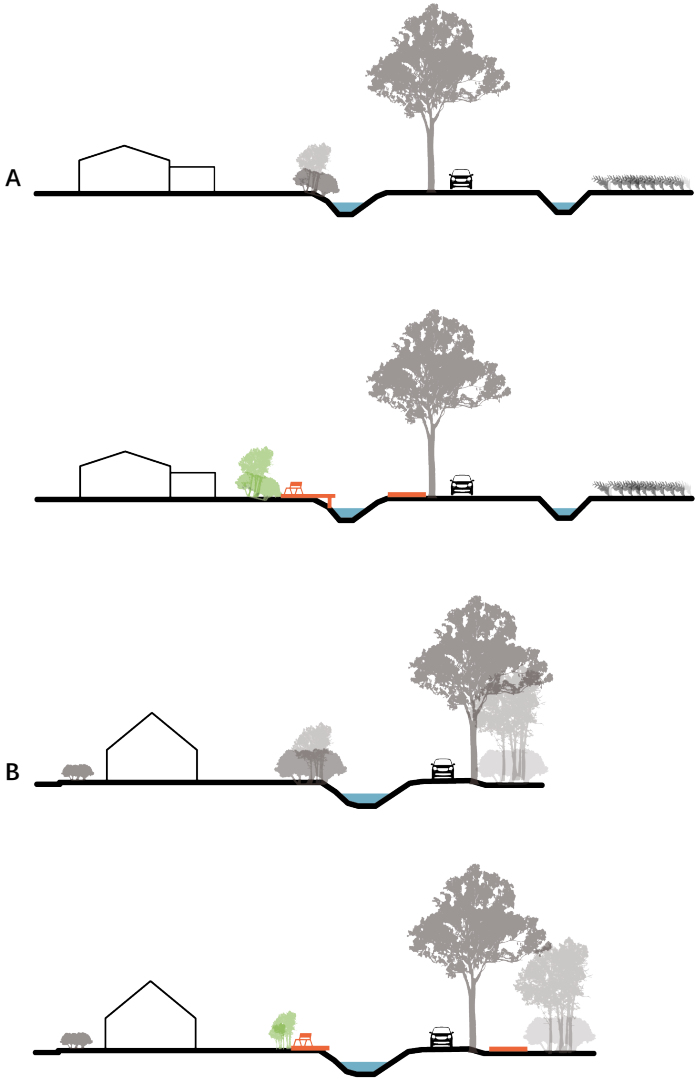


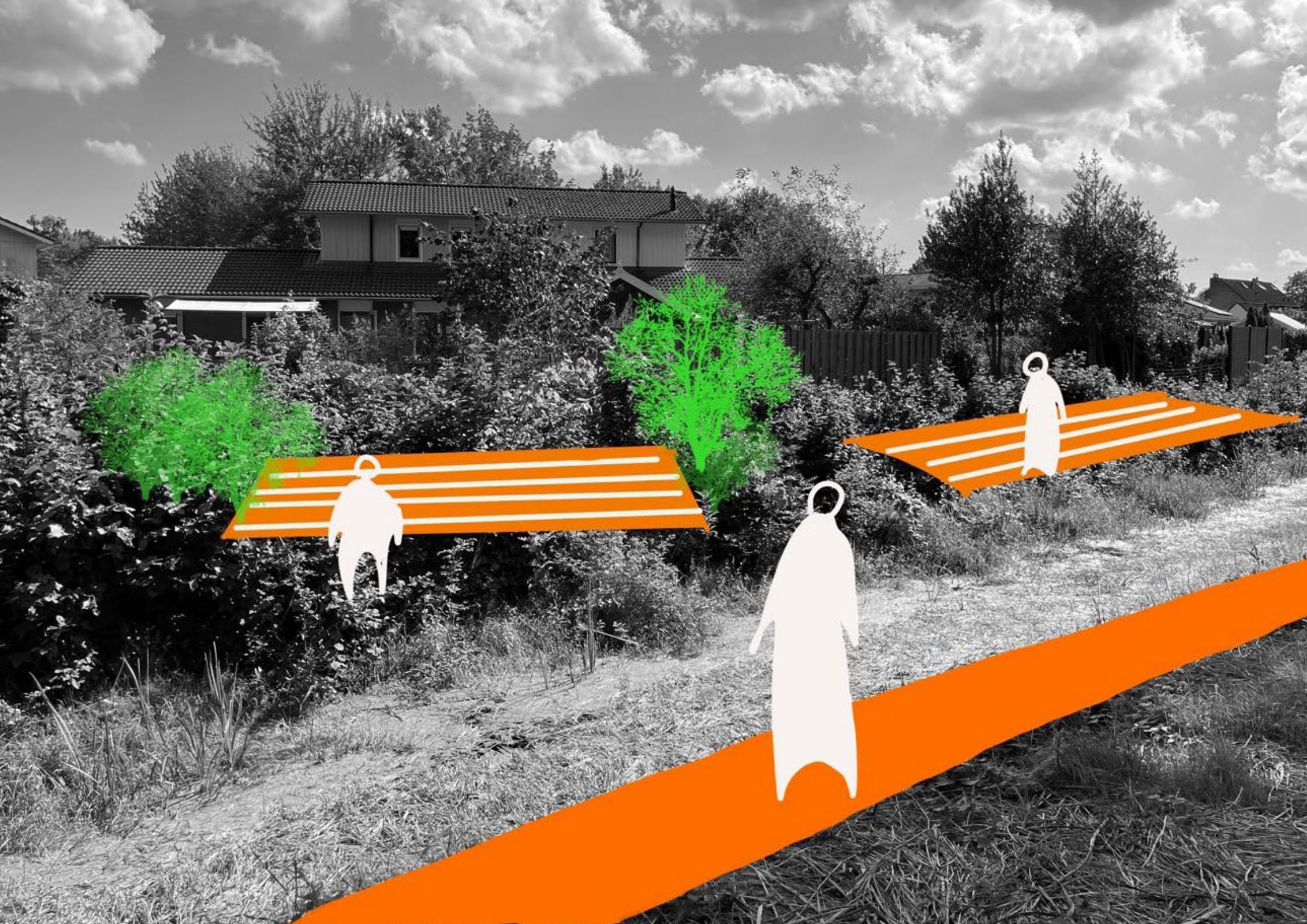


5.5.1.11 Sections of leisure space



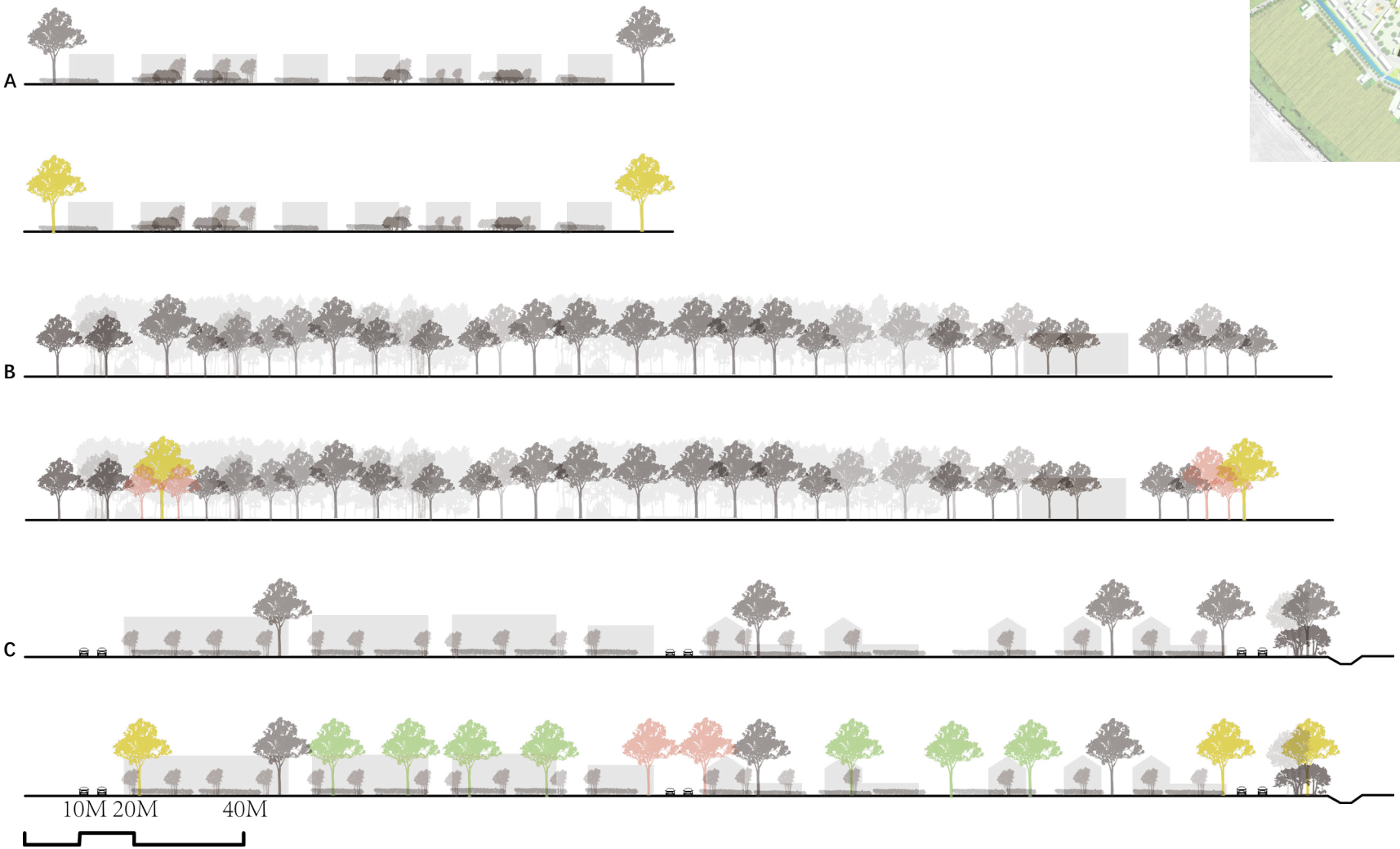
5.5.1.12 Sections of leisure space





5.5.1.13 Master plan of plantation

5.5.1.14 Sections of plantation



5.5.2 Tourism hub + Social hub

5.5.2.1 Pictures of current situation



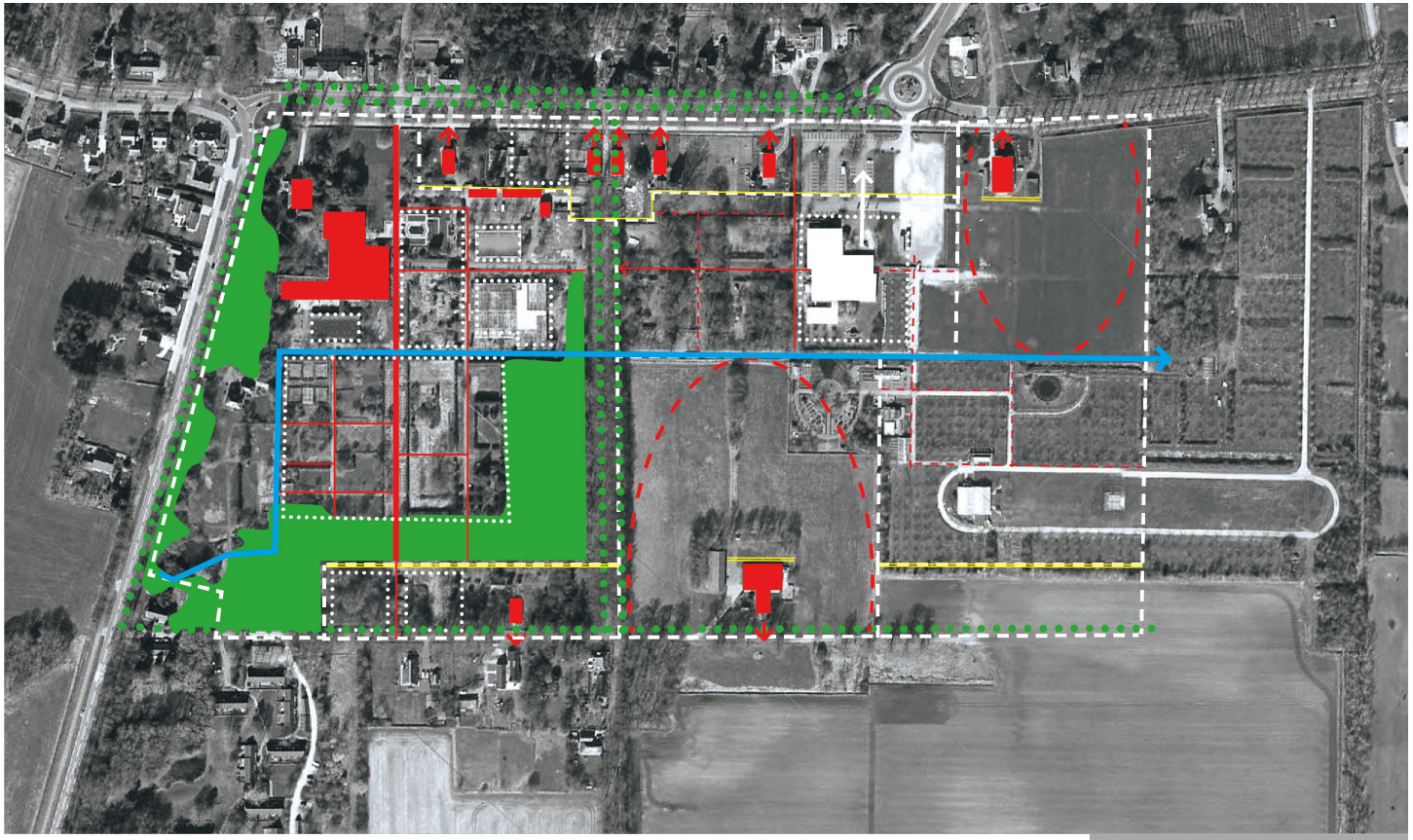






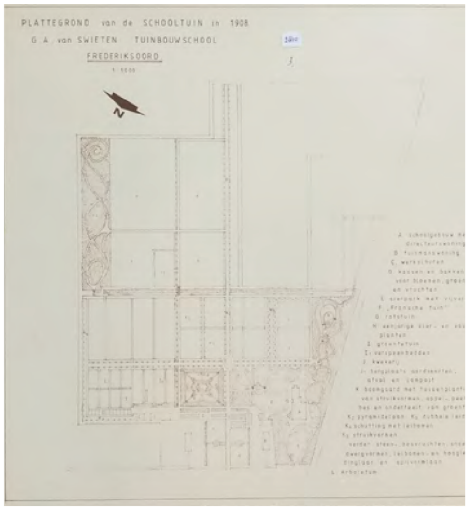



5.5.2.2 Structural mapping

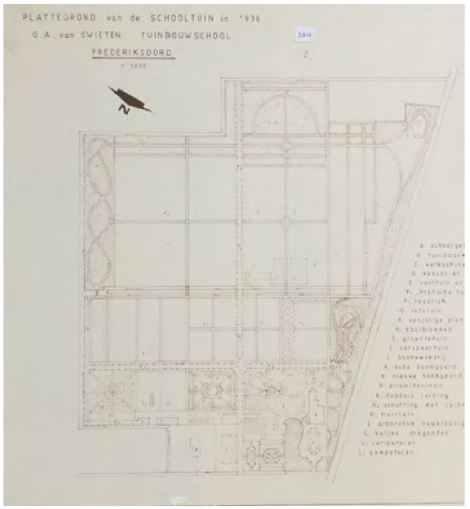


5.5.2.3 Master plan in history

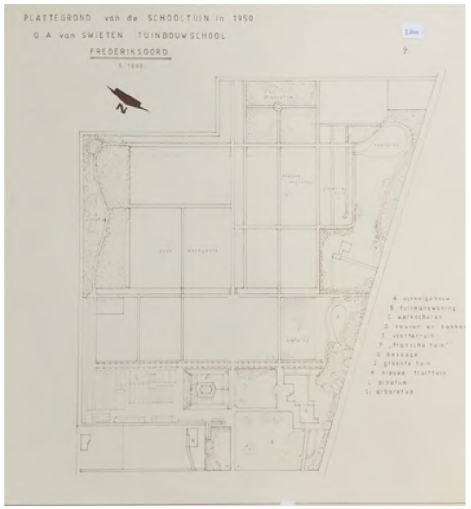
1887



1908



1936



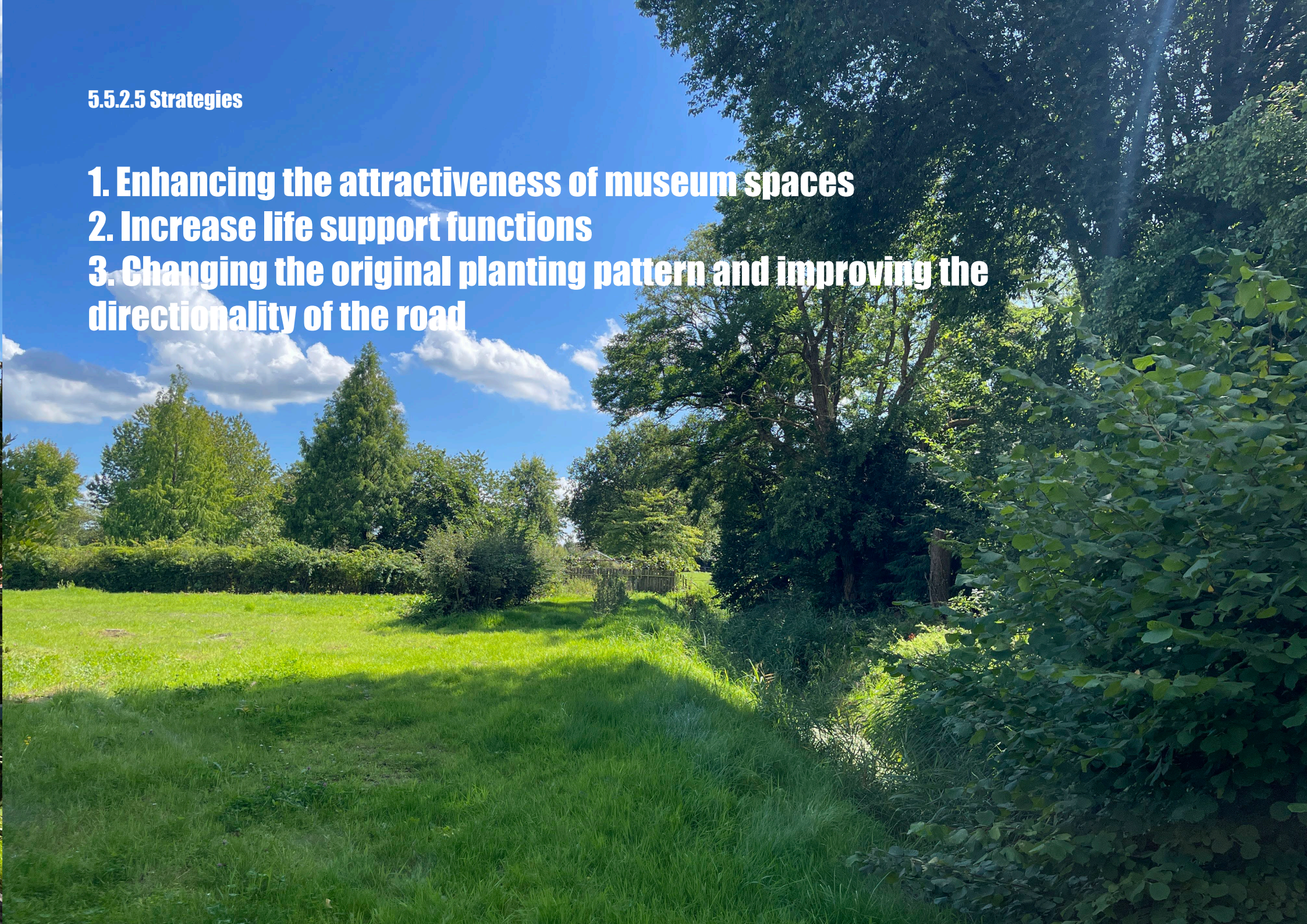
1950

1969

Source:
Access 0186, inv.no. 2810.5, Drents Archive

5.5.2.4 Problems

1. Insufficient attractiveness of tourist centres
2. Poor directionality of the road system
3. Lack of life service functions

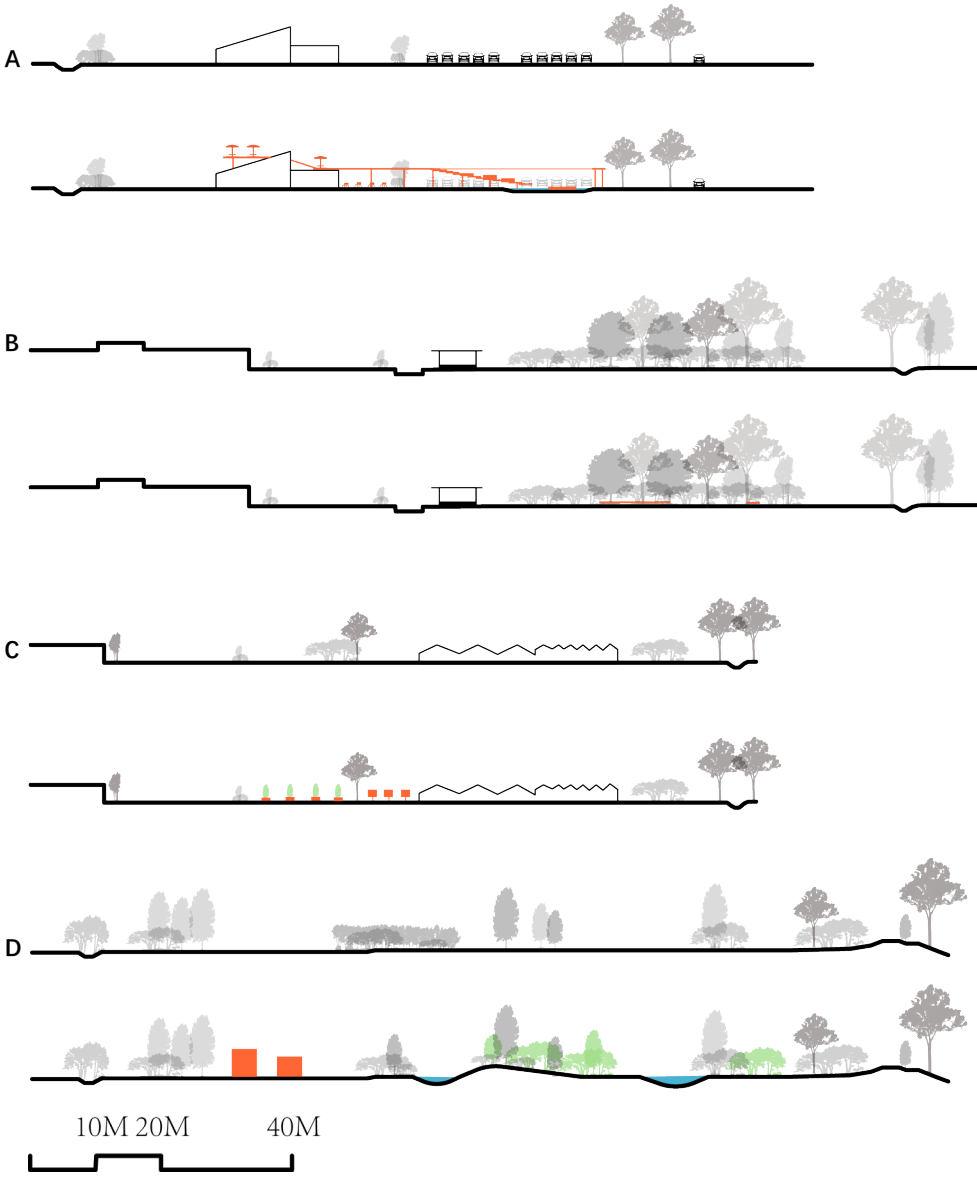


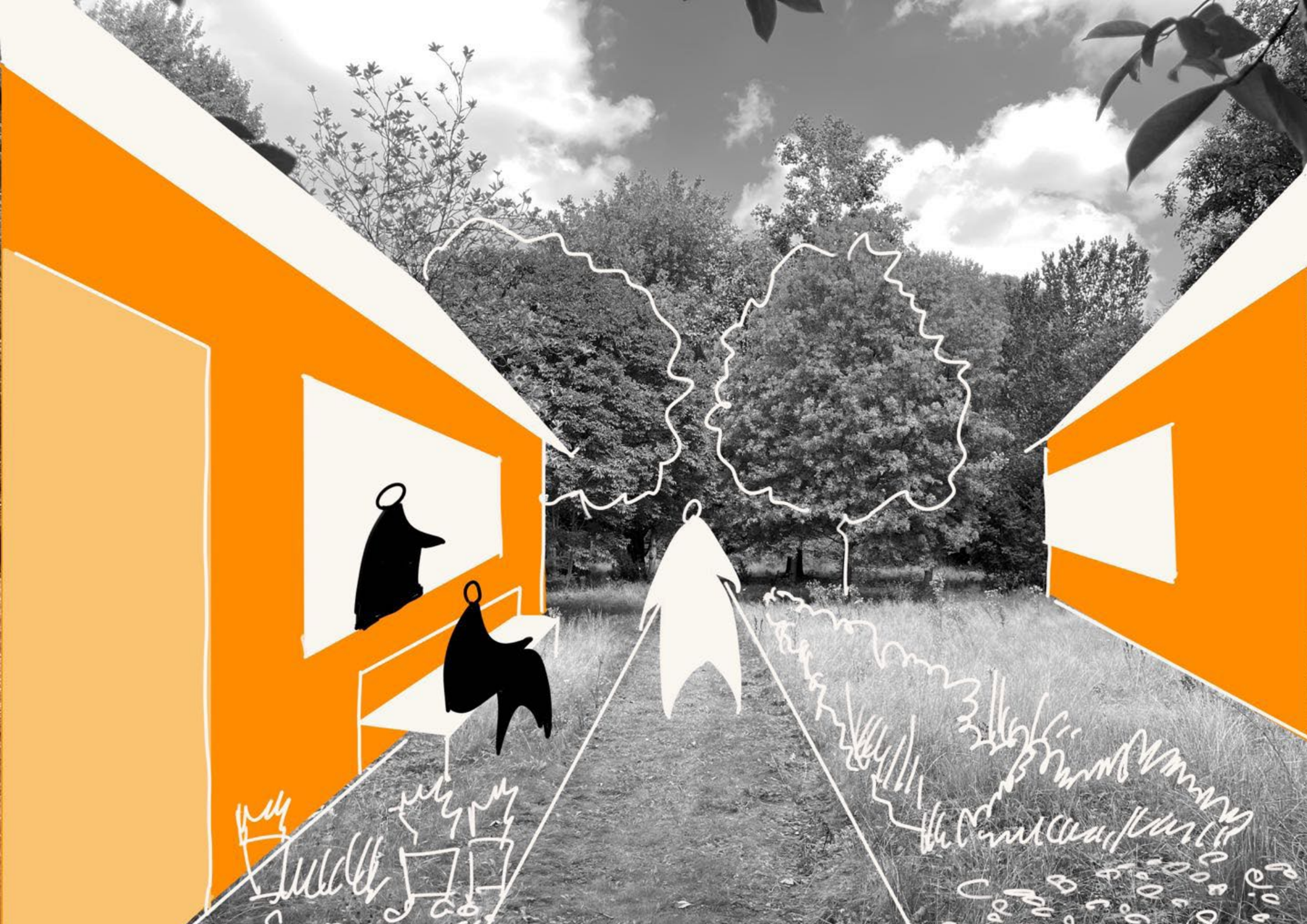
5.5.2.5 Strategies

1. Enhancing the attractiveness of museum spaces
2. Increase life support functions
3. Changing the original planting pattern and improving the directionality of the road

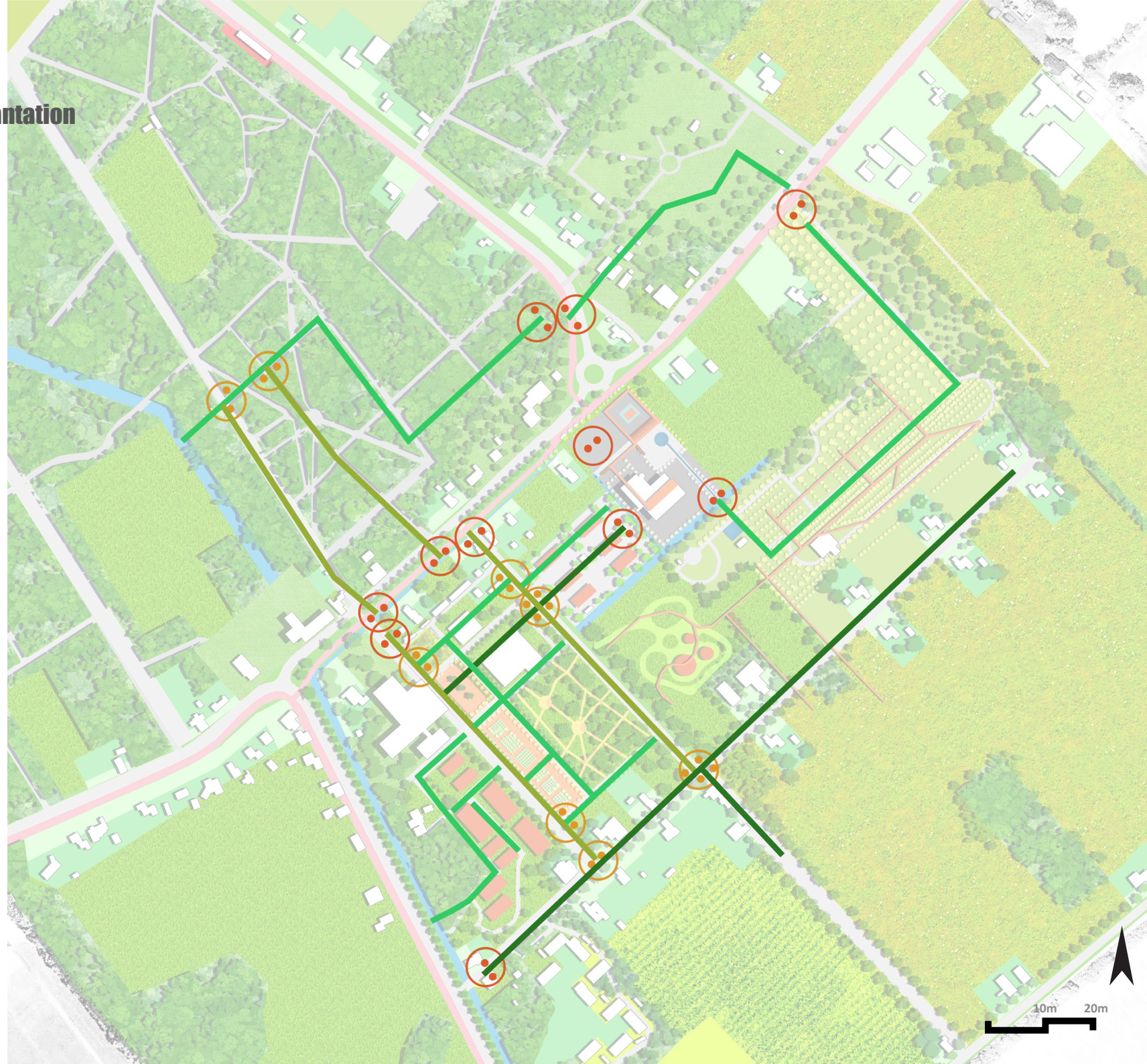
5.5.2.6 Zoning plan of hubs

5.5.2.7 Sections of zoning plan

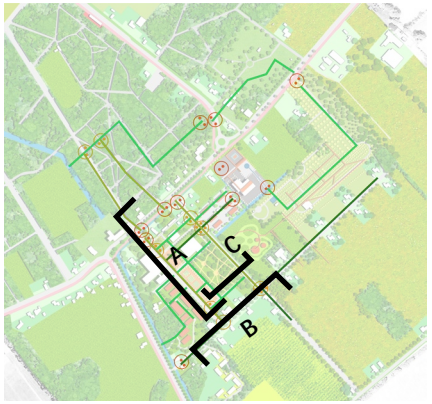




5.5.2.8 Master plan of plantation



5.5.2.9 Sections of plantation



A

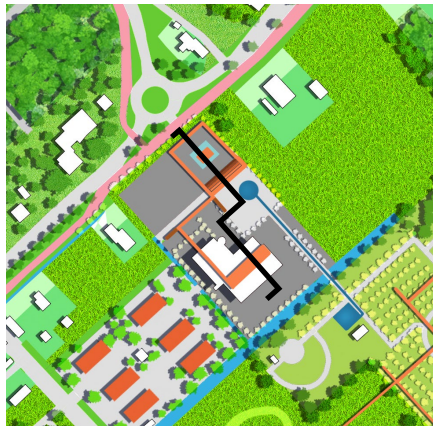
B

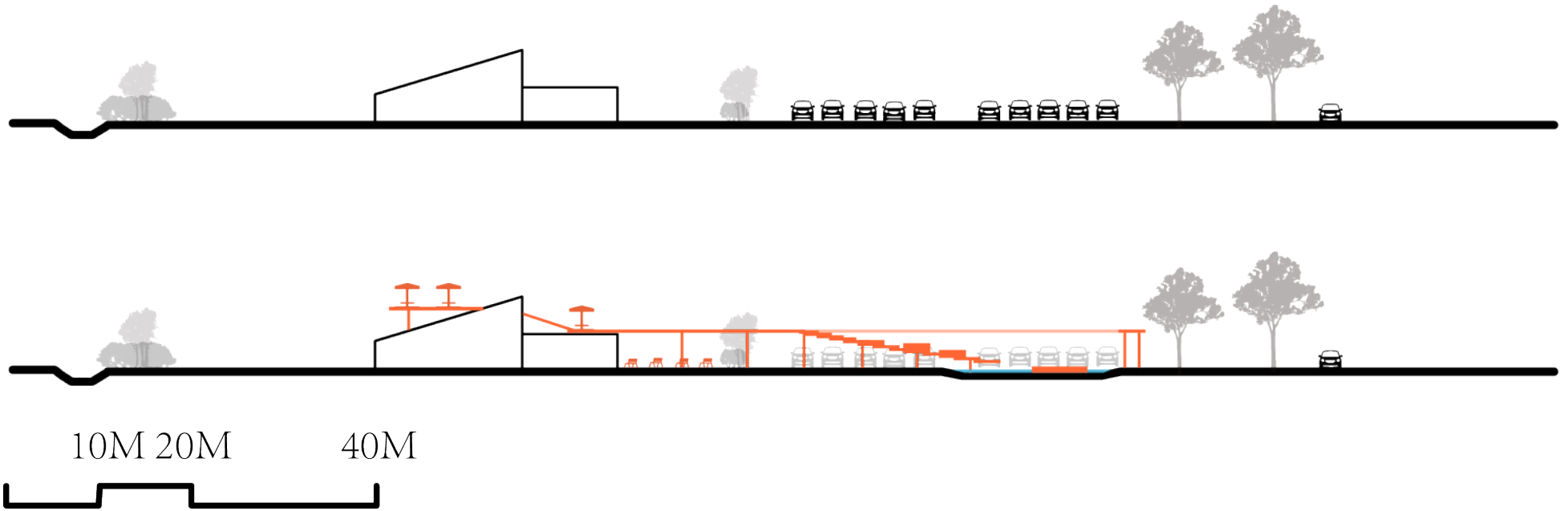
C

10m 20m

5.5.2.10 Masterplan of museum outdoor terrace

5.5.2.11 Section of museum outdoor terrace





5.5.3 Collective hub

5.5.3.1 Crop strategy

Plan of existing crops

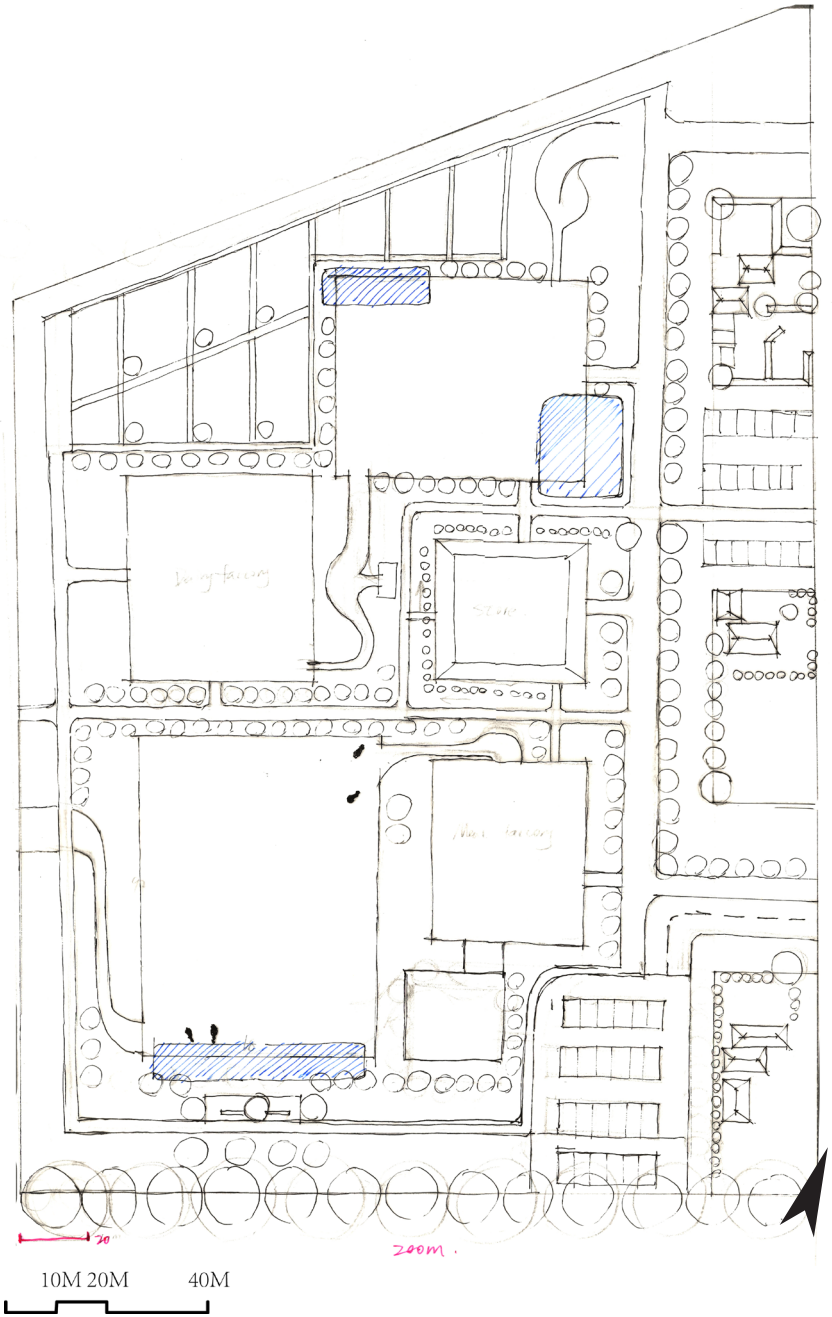
New collective agricultural planting programme

Collectivism is not only a spirit, but also a way of life and a mode of social production. The existing site is not suitable for the collective life model, so I chose to use the collectivist spirit in the planting model and disperse the original Planted crops are gathered together for collective planting, which can greatly reduce the consumption of manpower and materials.

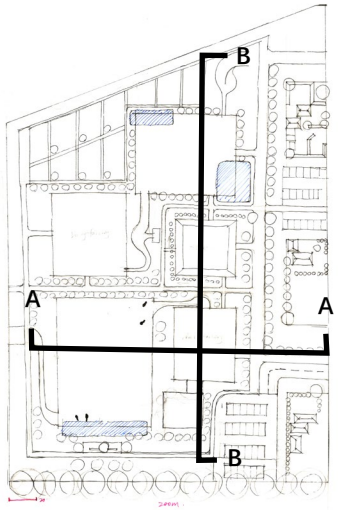
5.5.3.2 Dairy factory design

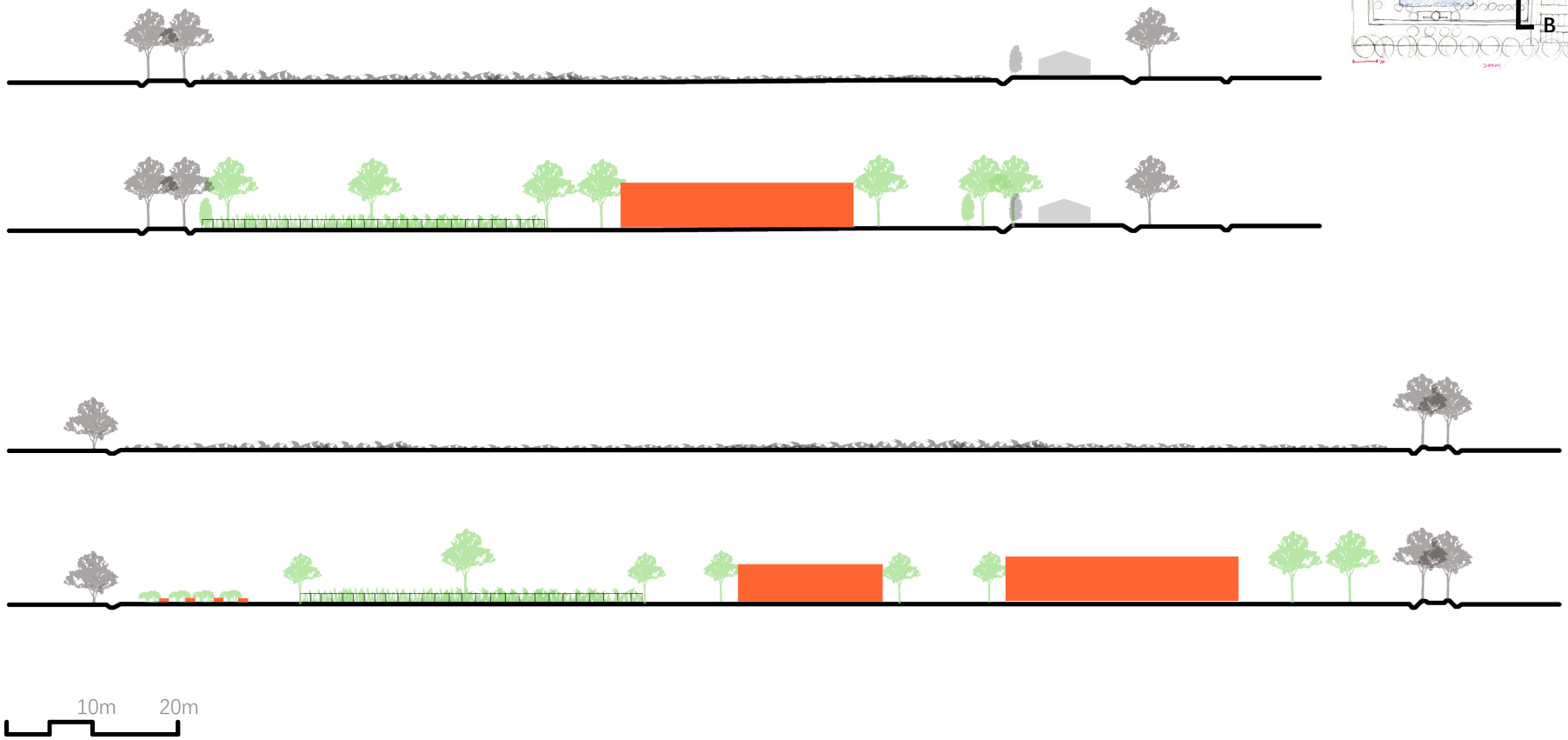
From another perspective, collectivism is reflected in the design by adding a dairy factory. The centralized processing of production and processing can solve the production problems of farmers within the existing village, and can also attract farmers from surrounding areas. The advantage of this strategy is that it increases employment while also reducing costs.

https://www.linkedin.com/posts/suji-widiyanto-a5a755186_yili-indonesia-dairyjoydayicecream-activity-6876344414957117440-hDrB/?trk=public_profile_like_view&originalSubdomain=id

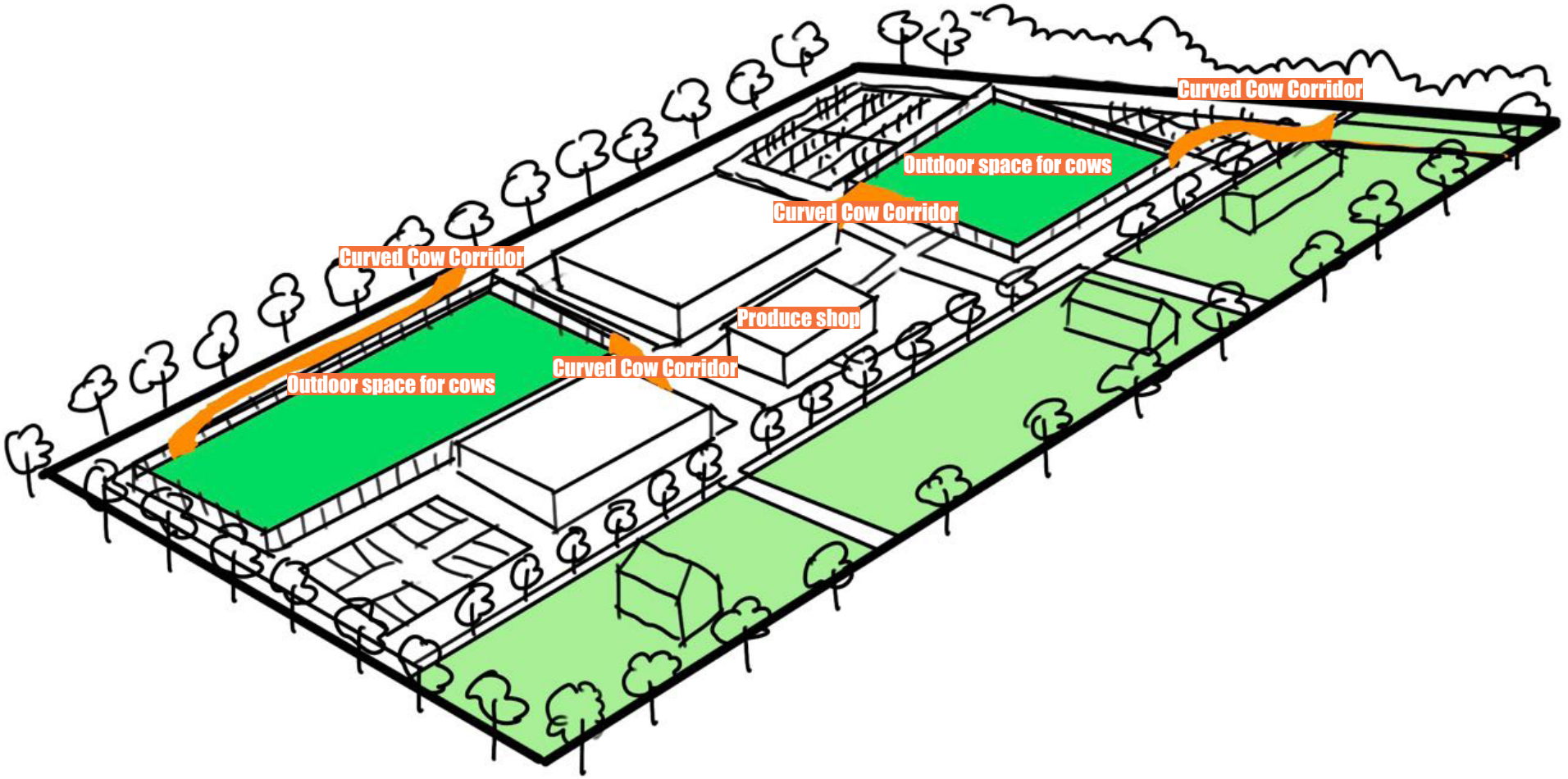


5.5.3.3 Sections of dairy factory

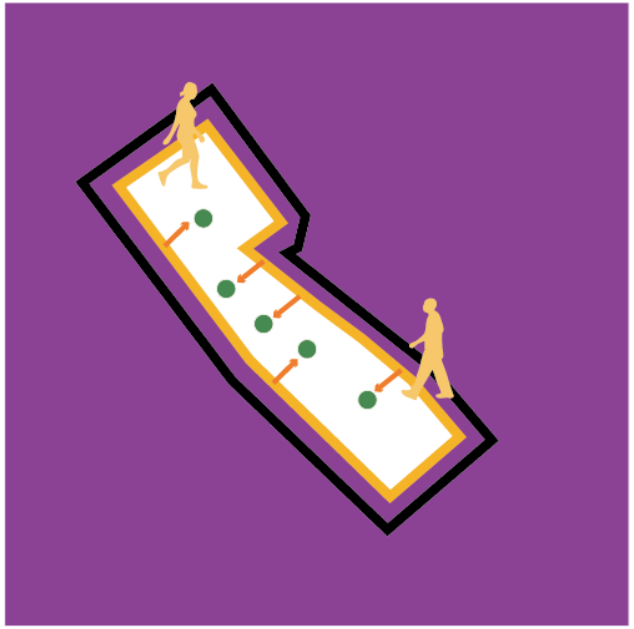




5.5.3.4 Zoning plan of dairy factory



5.6 Heritage design vision



The complexity of heritage makes it impossible for us to look at a certain element of heritage from a single perspective. Therefore, after designing at the basic ecological and social levels, I chose to face the research direction of heritage with a more abstract attitude. After my research, I found that the existing site lacked pedestrian trails and diverse experience methods and viewing angles, so on this basis, I chose to add a complete tourist trail to provide tourists and local residents with new observations angle.

5.6.2 Site path research

P1.29:Overall tour route, by author.

Central route

The central route has a large number of colonial buildings and institutions, allowing you to experience the full extent of the tangible heritage.

Leisure route

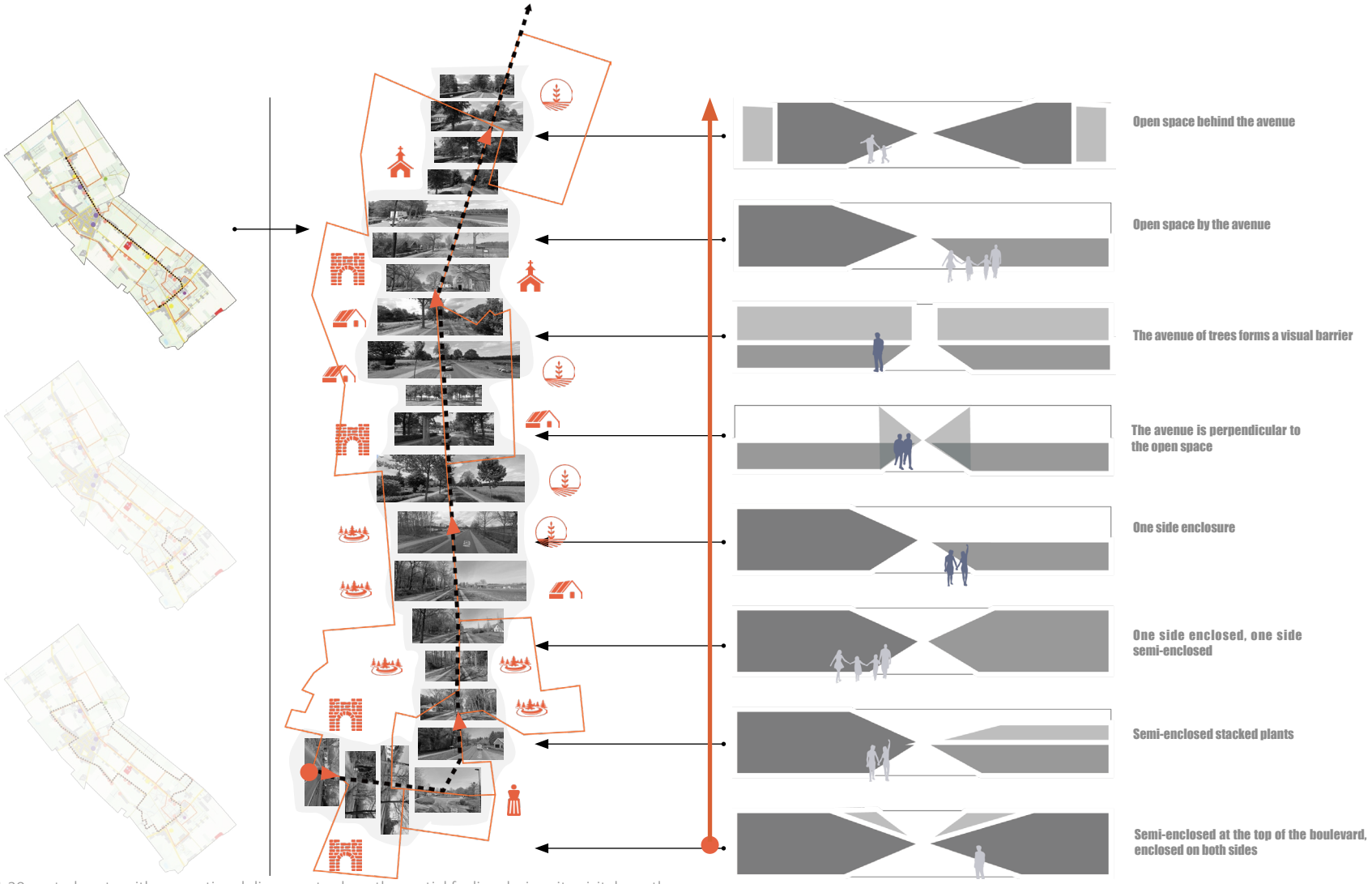
The Leisure route consists mainly of the remains of the gardens and the site of the agricultural school, which traverses the forest and footpaths in the heart of the region

Agro route

The Agro route is full of colonial agricultural heritage, with views of flat farms and crops along the route, as well as neo-colonial houses

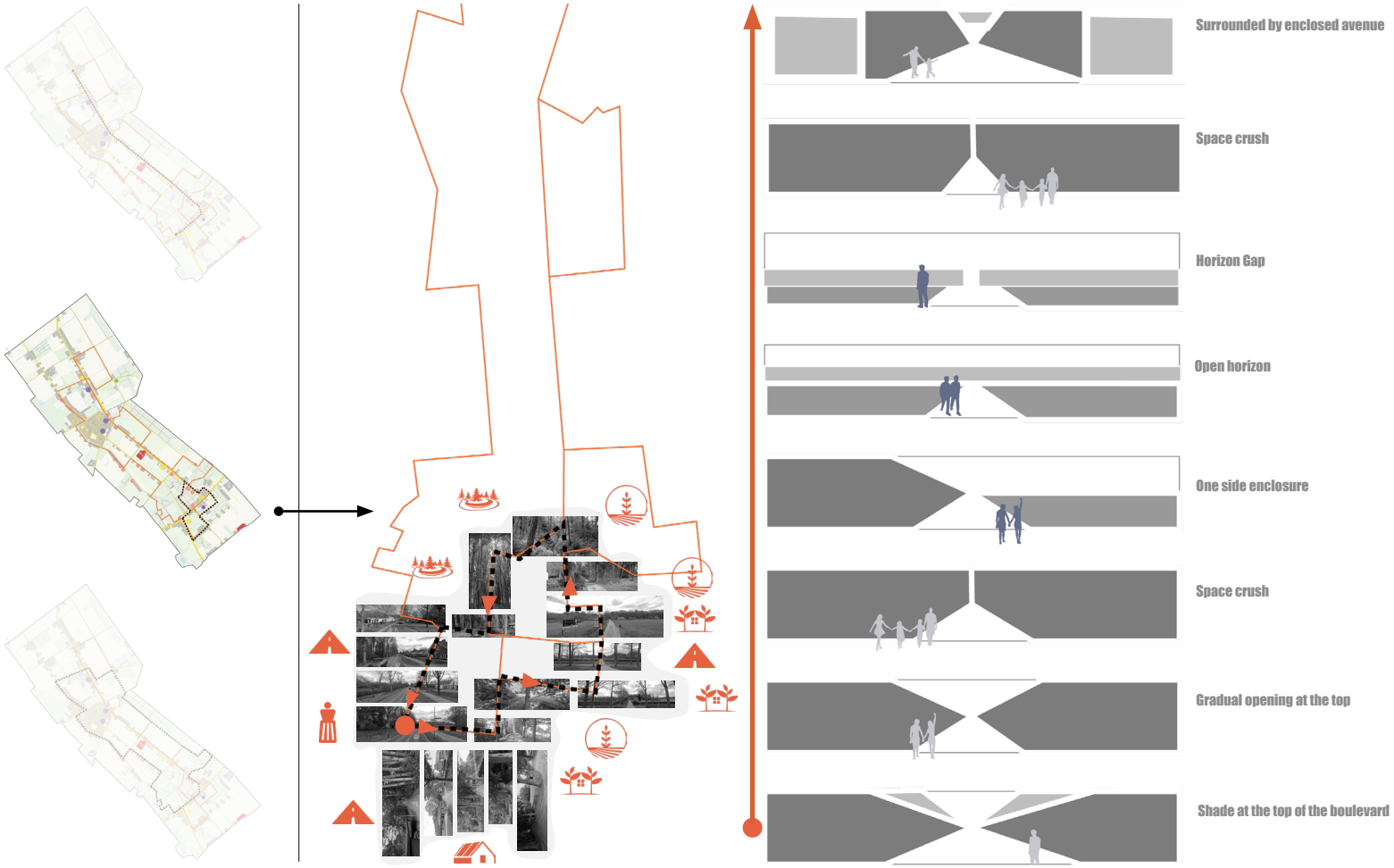
By examining the sites and establishing spatial perceptions, I hope to gain a foundational sense of the spatial patterns that construct the sites, rather than just a simple description of the planes. Also the establishment of spatial perception allows exploration of the rhythms of the spatial assemblage of heritage sites and their own uniqueness. In addition to spatial perception, the field survey also provides a reference for heritage assessment.

5.6.2.1 Site path research--Central route



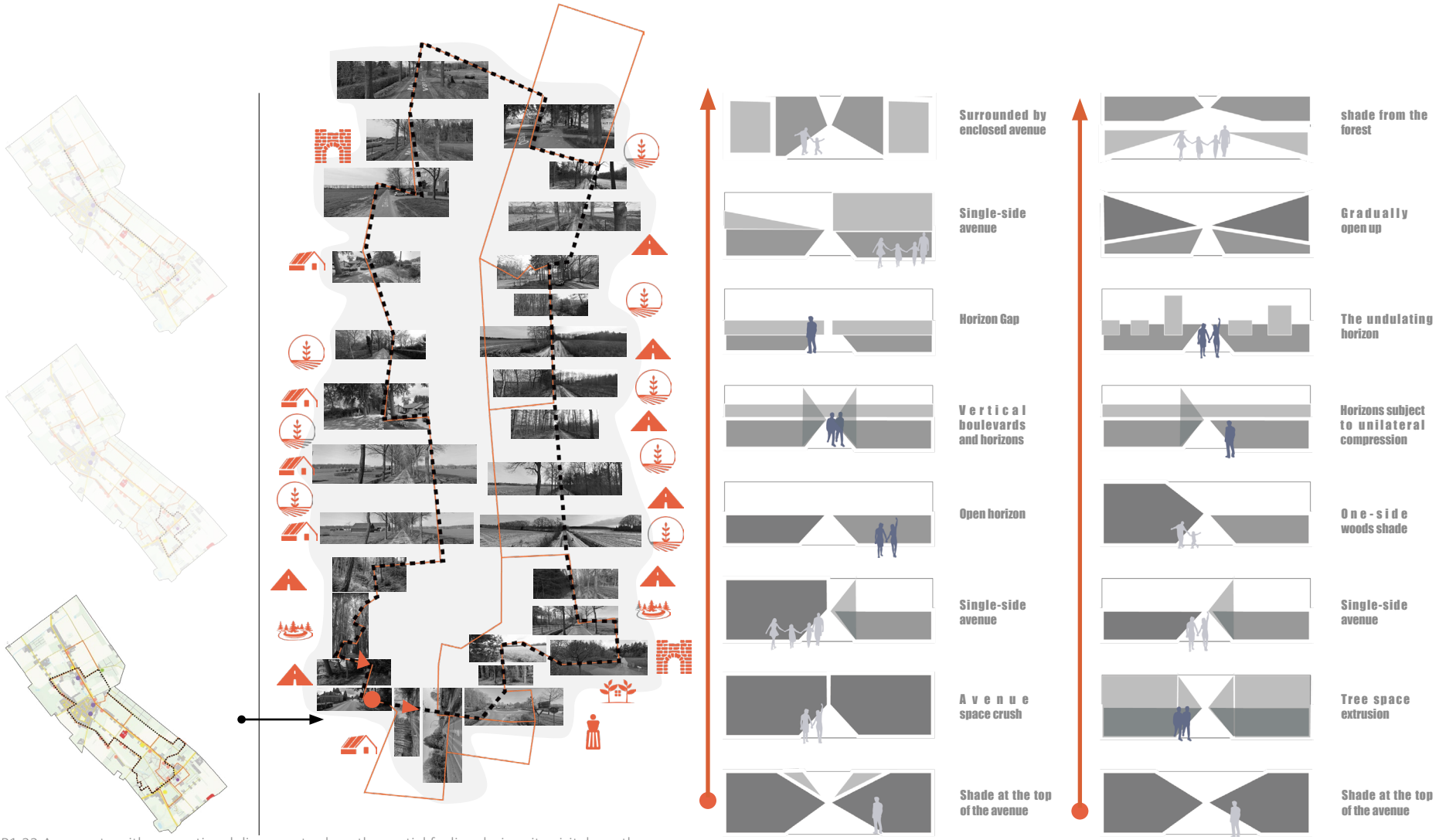
P1.30:central route with perceptional diagrams to show the spatial feeling during site visit, by author.

5.6.2.2 Site path research--Leisure route



P1.31:Leisure route with perceptional diagrams to show the spatial feeling during site visit, by author.

5.6.2.3 Site path research--Agro route

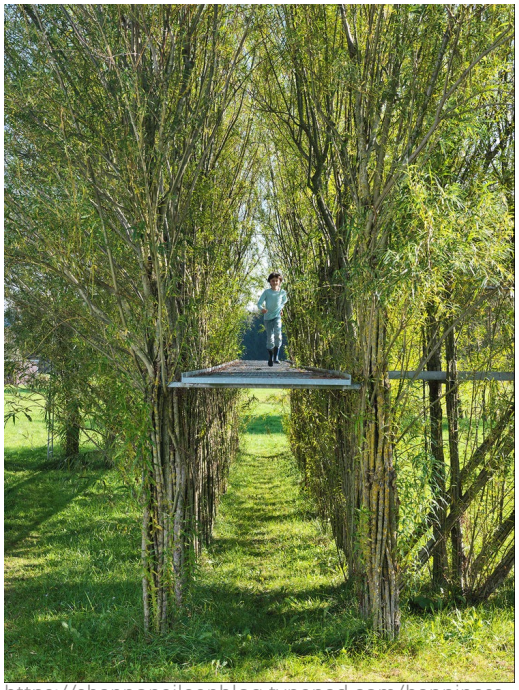


P1.32:Agro route with perceptional diagrams to show the spatial feeling during site visit, by author.

5.6.3 Problems

1. Lack of walking paths
2. Lack of diverse experience methods and viewing

5.6.4 Reflection on path

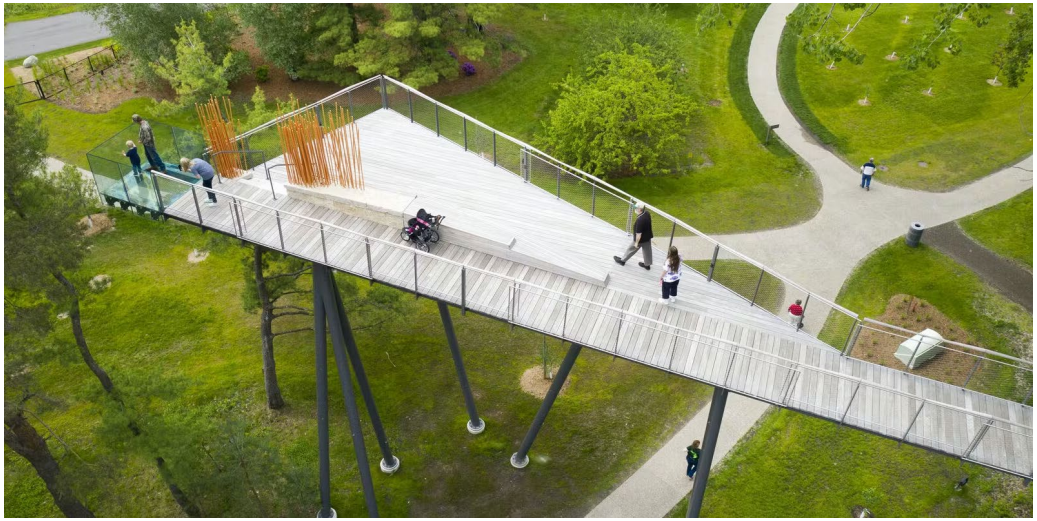


https://shannoneileenblog.typepad.com/happiness-is/2012/02/a-path-in-the-forest.html

https://www.archdaily.com/775884/baubotanik-the-botanically-inspired-design-system-that-creates-living-buildings

Based on the spatial perception of the different existing paths and the analysis of heritage resources, I decided to focus the design on the area around the museum. By activating disappearing historical axes and connecting neglected landscape spaces, I hope to increase the experience of activities around the museum and express a rethinking of the heritage.

I referred to many path cases. I hope to integrate the path with the surrounding landscape elements, hide the path itself in the woods, or highlight the historical charm of the original site through contrast.

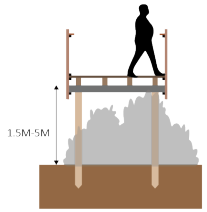


https://archinect.com/firms/project/44394952/whiting-forest-of-dow-gardens/150298407

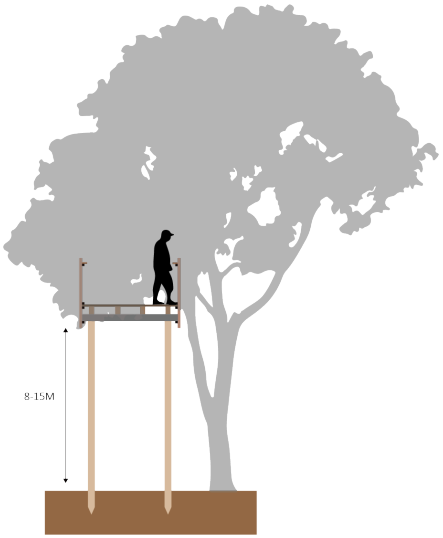
5.6.5 Design strategies

Trails at three different levels will give experiencers new viewing angles and ways. At the same time, this setting can create diverse combinations of trails and surrounding spaces, thus enhancing the heritage structure.

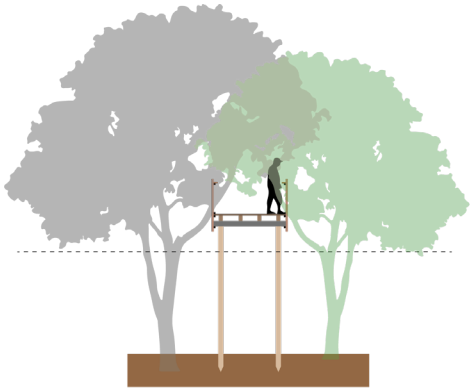
On ground



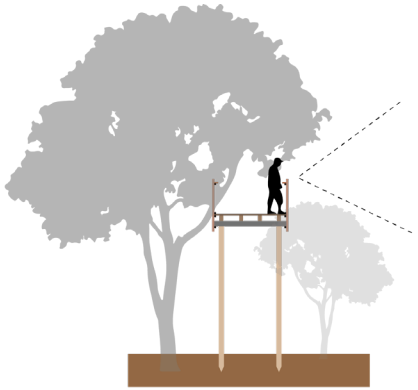
Medium height



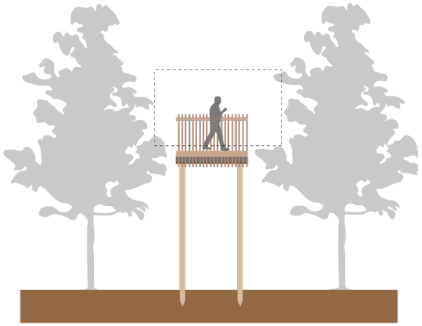
Canopy level



Add new trees and hide path



Gap space in tree canopy



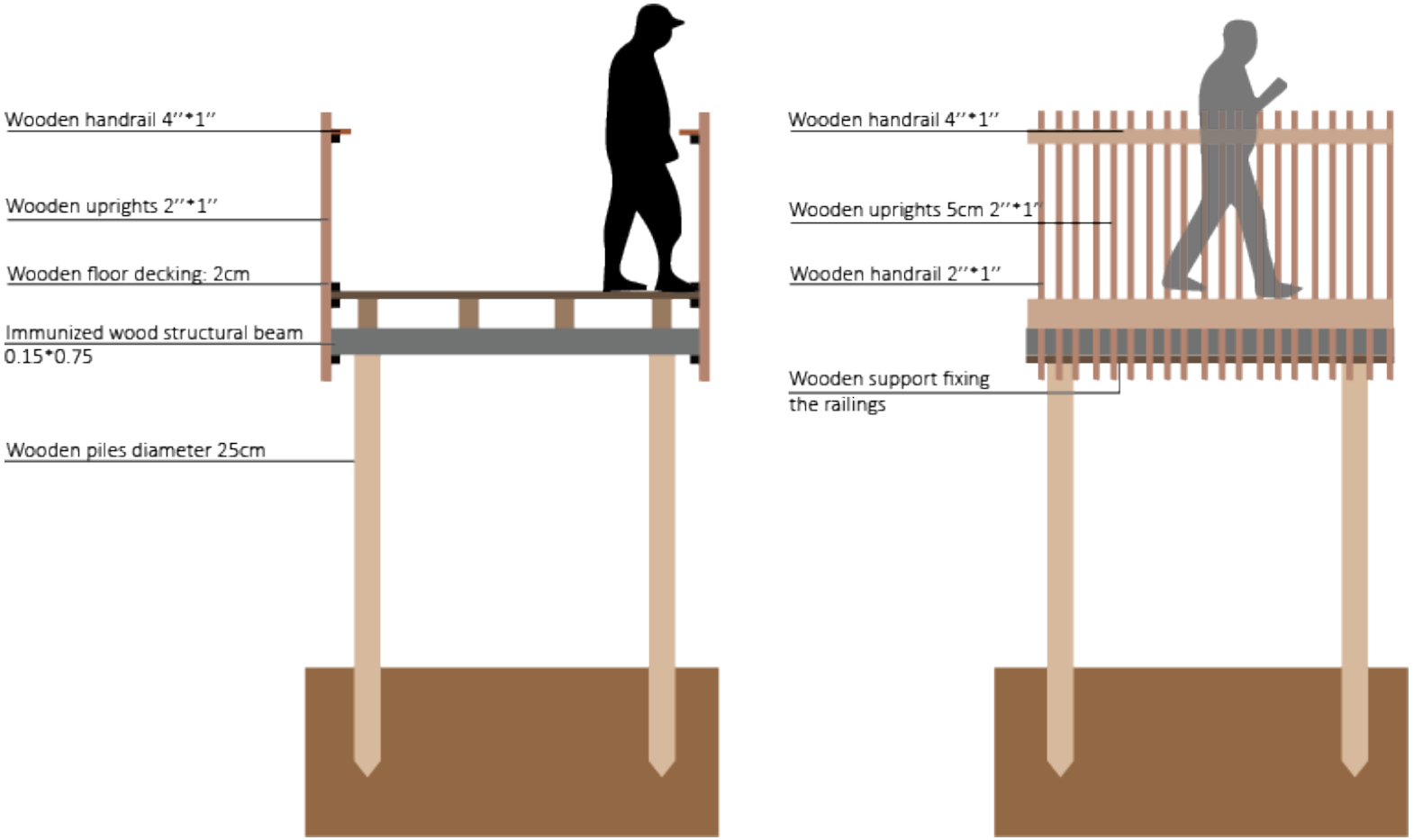
The open canopy frames the view

Hidden in bushes

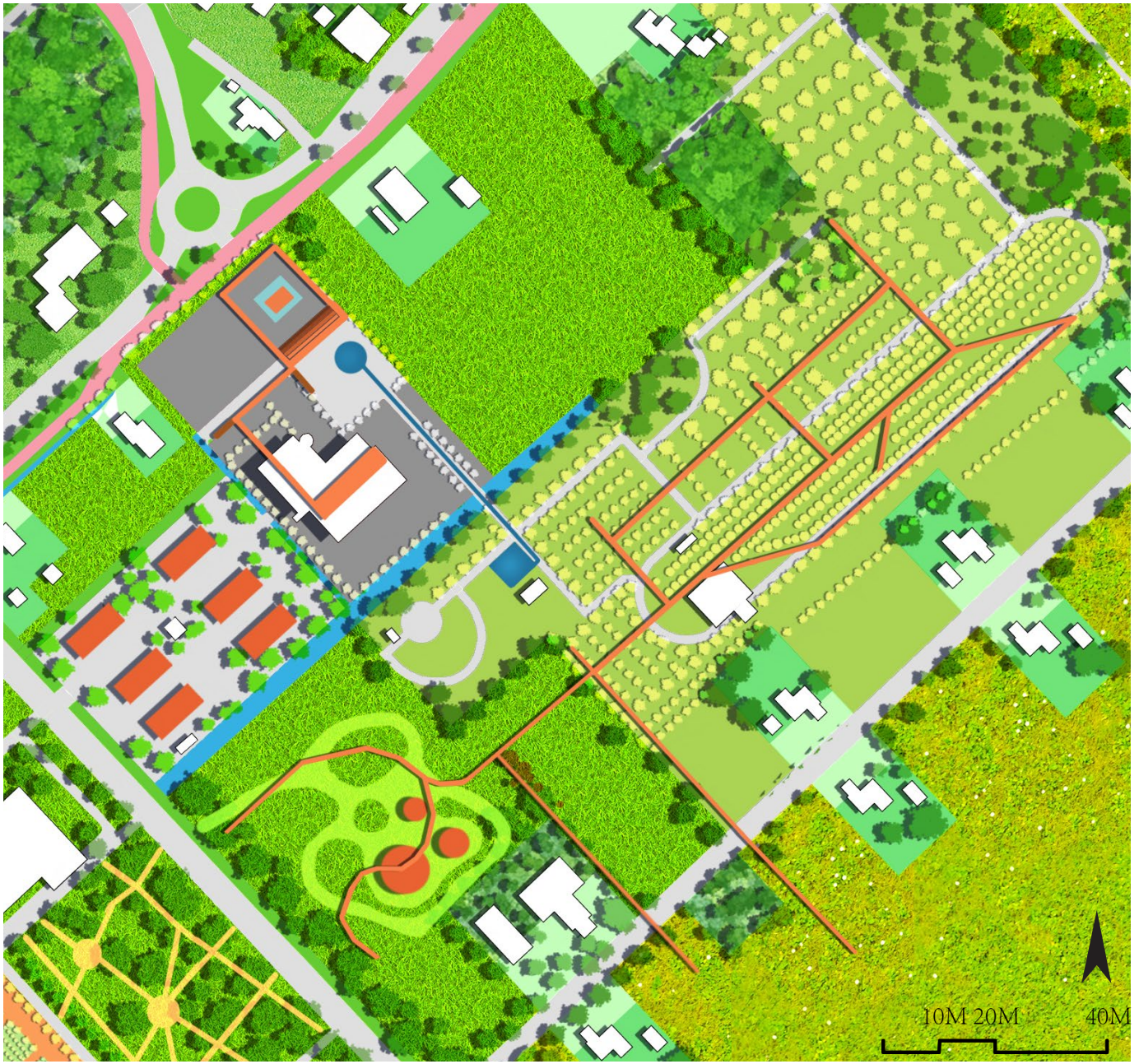
Interacting with agricultural landscapes

Interact with leisure landscape

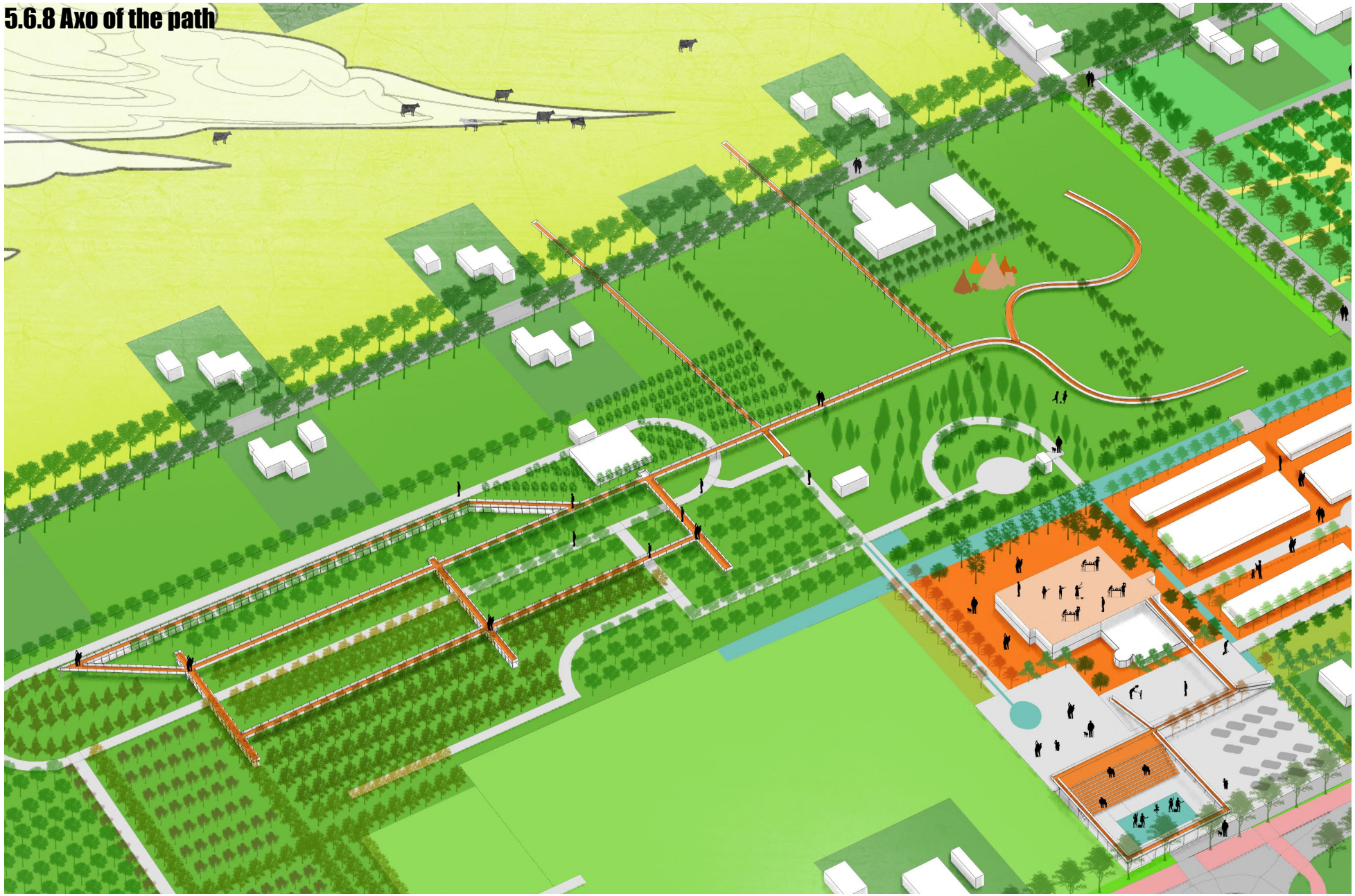
5.6.6 Section of the path



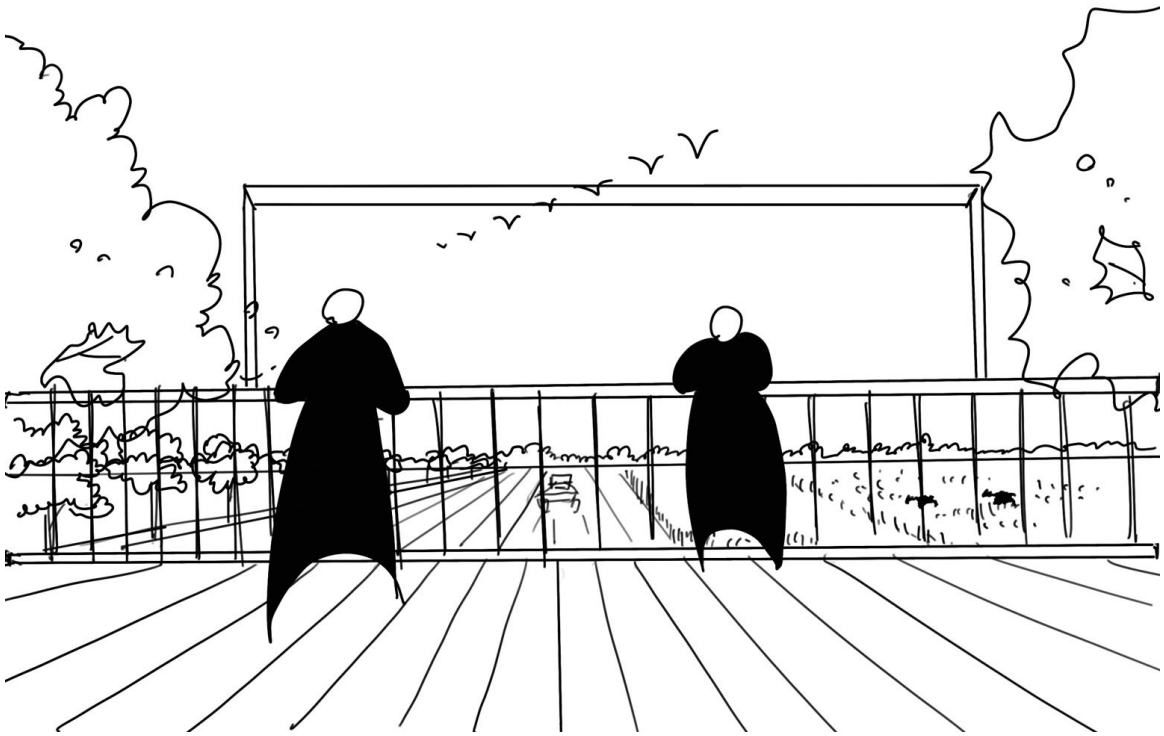
5.6.7 Plan of the path

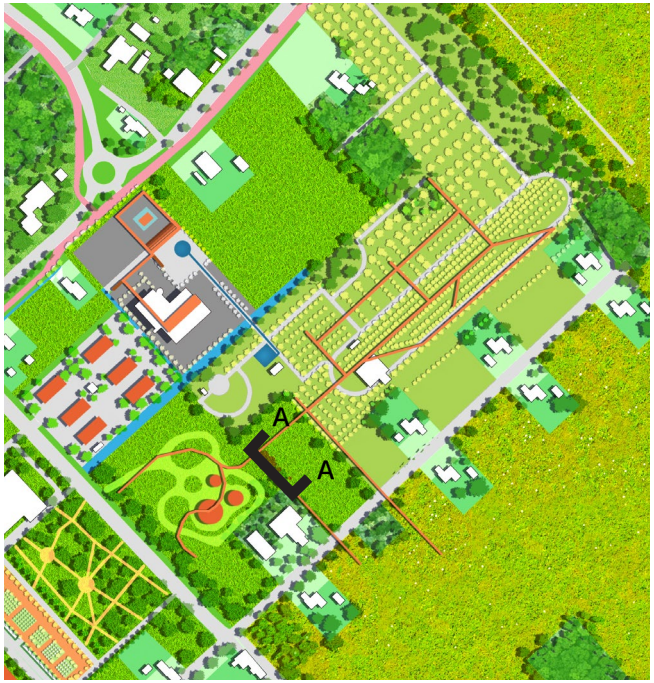


5.6.8 Axo of the path



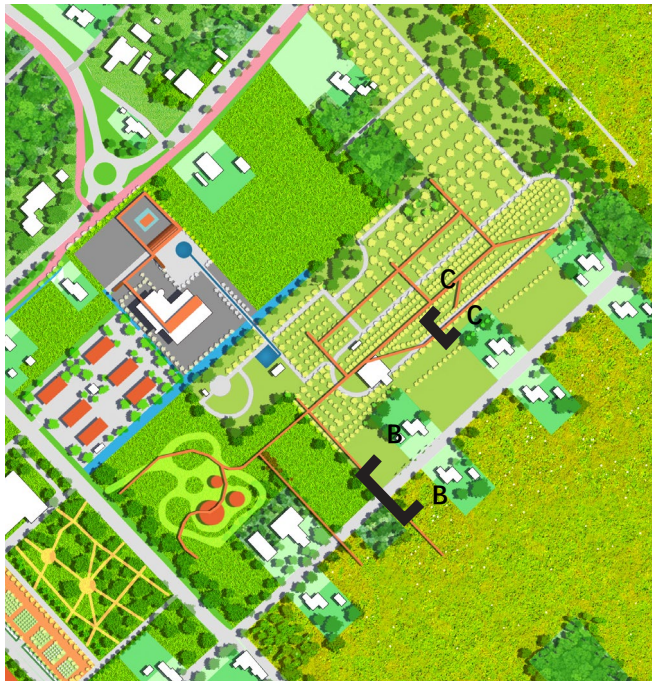
5.6.9 Section

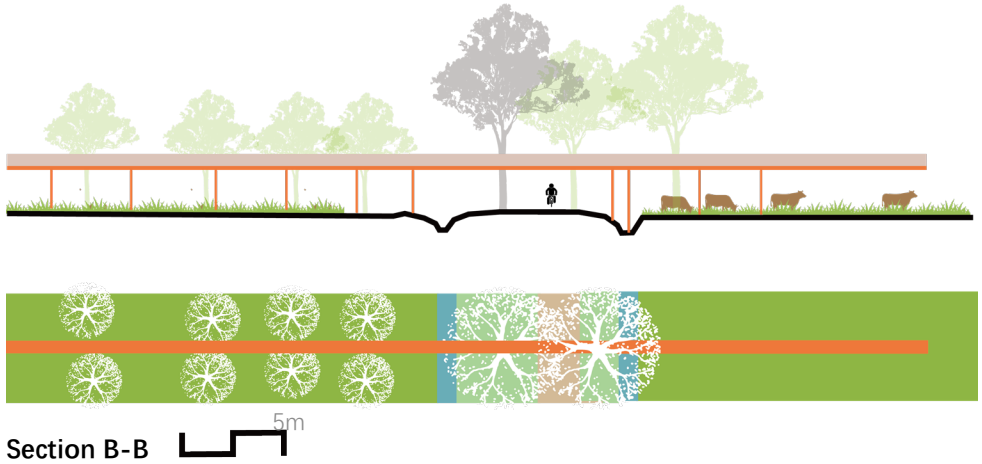




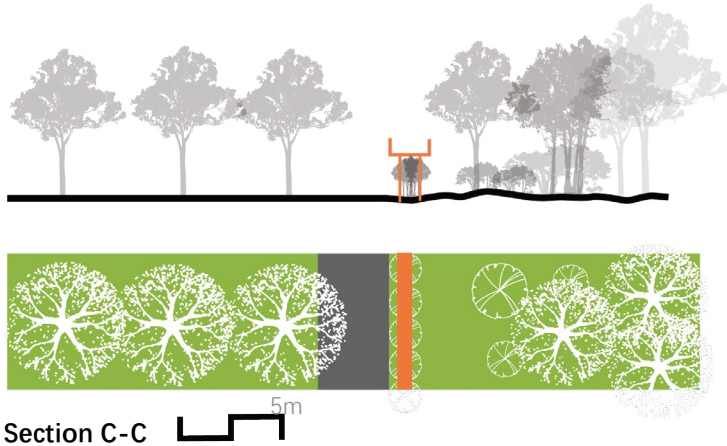
Section A-A

5m





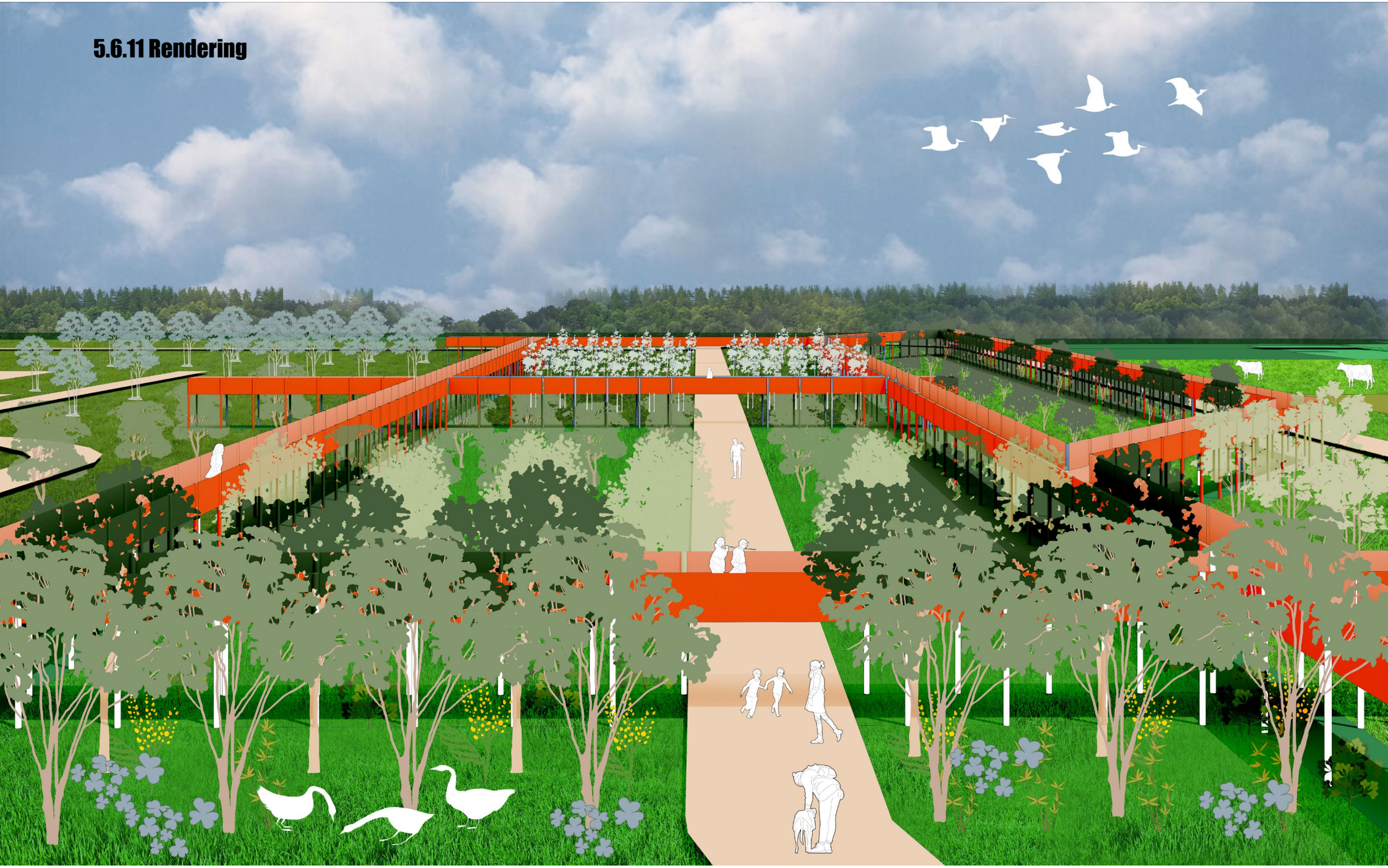
Section B-B



Section C-C

5.6.10 Rendering

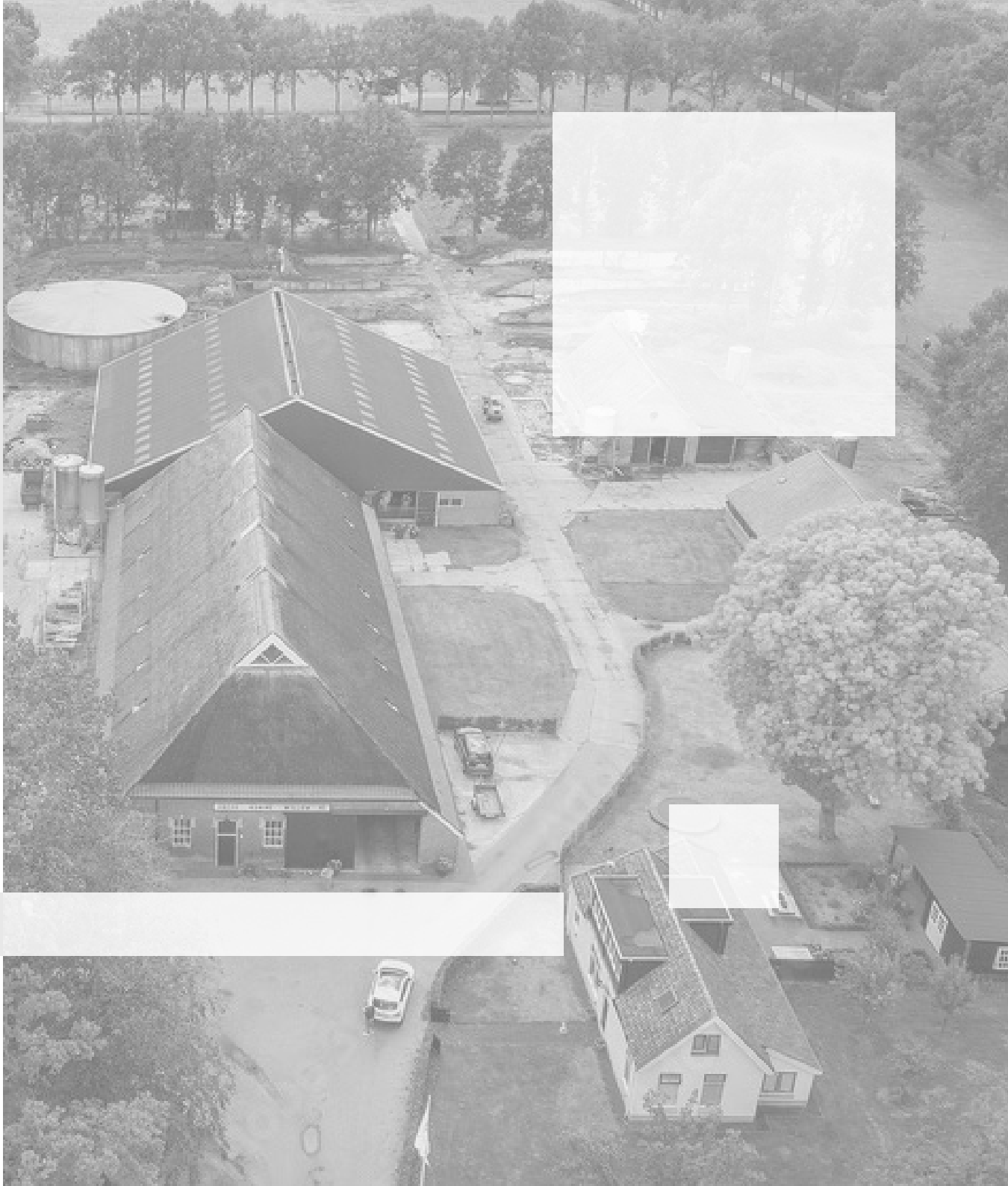
5.6.11 Rendering



5.6.12 Rendering

Reflection & Refference

06



I have a lot of experiences and insights regarding this design project, not only because I spent a considerable amount of time completing it, but also because I continually challenged my initial goals and assumptions throughout the learning process. I believe such experiences are crucial for my personal growth. Here, I'd like to share some reflections and insights from my graduation design process, documenting my thought process and experiences in three main sections: Research, Design Strategy, and Node Design.

Research

In the research phase, I conducted a comprehensive historical investigation of the project site: the villages of Frederiksoord and Willemsoord within the benevolent colonial estate. I also integrated my academic background in landscape and social spatial changes to outline the site's spatial logic and characteristics. This helped me understand the project's history and basic spatial structure. Notably, my research focus evolved from initial historical themes to agricultural themes and finally to modern dairy farming. These shifts represented my exploration and excavation of the site's definition, forming the foundation of my design: What kind of site am I designing? To answer this, I refrained from obsessing over its definition and instead aimed to fill this container with enough information for the final answer to become a natural choice. I designed my own framework, filling it with usable information, a personalized design interpretation that allowed me to achieve the optimal solution within my limited resources. Gathering as much information as possible was crucial for making relatively scientific judgments, forming the fundamental logic for this project, which enabled me to intervene in space and ecology based on the actual use of the site.

Design planning

In the spatial planning and node design aspects, I used contrasting approaches. For heritage site spatial planning, I had to consider the specific usage patterns and practical needs of local residents, focusing on how to add new functions and spaces within a smaller scale. Conversely, for node design, my concern was more about how nodes could enhance heritage attributes and cultural value on a larger scale, as nodes are an integral part of the overall touring experience system.

During the initial design phase, I faced a clear challenge: how to transform research findings into concrete designs. Converting a research-oriented mindset into a design-oriented one was difficult, as these two have entirely different states and evaluation criteria. Additionally, I lacked a strong starting point for design. Due to extensive preliminary research, I had numerous points of inspiration and design possibilities. However, in hindsight, this was not necessarily a good thing as it made it challenging for me to maintain control over the overall design.

I felt lost for a considerable time during this stage, unsure which direction to pursue in-depth. I experimented with various angles for design but still fell short of my expectations. After a period of confusion, I chose to intern, believing that practical work experience would benefit me. It did indeed prove helpful. I used my internship experiences to correct my earlier mistakes and greatly benefited from them during the later P4 design phase.

Node design

Node design was a central component of my project. Once the structural framework was established based on research and directional choices, I proceeded with the specific spatial design. During this stage, I primarily employed two research methods. The first involved extensive reading and research on similar designs to expand and compare design approaches. The second method was the construction of physical models, enabling adjustments to specific spatial forms based on the relationship between nodes and the surrounding site in 3D models. These approaches allowed me to continuously discover possibilities and assess the feasibility of the outcomes, thereby developing specific measures that could influence the space within the existing framework.

In this part, I had three main aspects to consider: ecology, society, and heritage. I'd like to particularly discuss spatial design in the context of heritage. In this aspect of the design, I noticed a lack of pedestrian pathways within the site, and the heritage structures had not been adequately emphasized in their development. As a crucial part of historical heritage, many large-scale spatial characteristics were not easily accessible to observers. Therefore, I aimed to enhance the experiential aspects of the site, alter the existing mode of observation, and introduce new perspectives. I utilized existing tree-lined spaces to create pedestrian walkways, some of which were elevated to introduce variations in height and new viewing levels.

Throughout the design process, I spent a significant amount of time reflecting because I needed to continually verify that such a structure would not adversely affect the existing heritage spaces. The process of constantly challenging my initial designs was something I greatly enjoyed and was eager to explore. This was an aspect I rarely considered in the past because basic design reasoning often didn't provide much room for practical action. Many real-world and practical issues require engineering or ecological solutions, whereas soft transformations of space like this demand a deep understanding of the site, its needs, and its problems. Therefore, after attempting different approaches, I chose not just a node-scale design but rather opted to influence the entire site, a decision based on my understanding and perception of the site.

In summary, throughout this graduation design project, I gained valuable experience, pushed beyond my comfort zone, and honed my ability to translate research findings into design outcomes. I believe that this graduation project will have a significant impact on my future learning and work.

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